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208 Planning in Illinois for Federal Funding Years 1977 through 1981

Illinois State Environmental Protection Agency
Springfield

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208 PLANNING IN ILLINOIS

For Federal Funding Years 1977 Through 1981

Illinois Environmental
Protection Agency
Division of Water
Pollution Control
Planning Section
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This report contains an abstract for all FY 1977 through FY 1981 projects completed under the Illinois 208 Water Quality Management Planning Program. The projects were completed by four agencies: The Illinois Environmental Protection Agency (IEPA), the Northeastern Illinois Planning Commission (NIPC), the Southwestern Illinois Metropolitan and Regional Planning Commission (SIMAPC) and the Greater Egypt Regional Planning and Development Commission (GERPDC).

The abstracts are organized by eleven program categories and are subdivided by Planning Agency. The eleven categories are:

1. Agricultural Nonpoint Sources
2. Urban Stormwater/Construction Erosion Management
3. Hydrologic Modifications
4. Residual Wastes
5. Oil Field Brine
6. Point Sources and On-site Systems
7. Implementation Oriented Projects
8. Special Water Resources: Groundwater
9. Special Water Resources: Lakes
10. Water Quality Standards Review Program
11. Miscellaneous Other Planning Projects

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208 PLANNING IN ILLINOIS

FOR FEDERAL FUNDING YEARS
1977 Through 1981

Compiled By

Wendy Blake Coleman
and
William A. Sullivan

Water Pollution Control Division

Illinois Environmental Protection Agency

1-a

DISCLAIMER

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208 PLANNING IN ILLINOIS

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ABSTRACT

This report contains an abstract for all FY 1977, through FY 1981 projects completed under the 208 Water Quality Management Planning Program. The projects were completed by four agencies: The Illinois Environmental Protection Agency (IEPA), the Northeastern Illinois Planning Commission (NIPC), the Southwestern Illinois Metropolitan and Regional Planning Commission (SIMAPC) and the Greater Egypt Regional Planning and Development Commission (GERPDC).

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9. Special Water Resources: Lakes
10. Water Quality Standards Review Program
11. Miscellaneous Other Planning Projects

Each Agency's abstracts are arranged from the earliest to the most recent federal funding year and are ordered by task number. NIPC's outputs are also listed by their Unified Regional Planning Program (URPP) number.

Many abstracts were taken directly from output reports. Where necessary abstracts were reorganized or if absent, written. Abstracts on public participation and other process oriented projects were written from information obtained from quarterly reports. In addition, some of the SIMAPC project abstracts were obtained from material developed under the Water Quality Management Consolidation Plan, process.

208 PLANNING IN ILLINOIS

Part A

Agricultural Nonpoint Sources

208 PLANNING IN ILLINOIS

Part A

Agricultural Nonpoint Sources

Projects of the Greater Egypt Regional Planning
and Development Commission

PROJECT TITLE: AGRICULTURE -- WATER QUALITY PRIORITY AREAS (TASK III)

OUTPUT TITLE: Priority Areas: Rend Lake and Cedar Lake Watersheds

ABSTRACT: Land use, soil type and slope are utilized to define critical erosion areas. The Rend and Cedar Lake Water Sheds were analyzed using the Universal Soil Loss Equation to determine critical erosion zones within priority (major water supply) areas.

PLANNING AGENCY: GERP&DC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: MODEL DEMONSTRATION PROGRAM (TASK II)

OUTPUT TITLE: Erosion Control Priorities and Progress Reporting:
Jackson County (December 1980)

ABSTRACT: The Universal Soil Loss Equation was used to predict estimated soil loss in 54 watershed segments in Jackson County. Soil losses above tolerance were reported for 30 of these segments. Those areas with soil loss estimates more than 11 tons/acre/year were assigned first priority for concentration of soil conservation measures. Estimated soil loss, average tolerance, percentages of land use, slope data, and composite K and C factors are given for each watershed segment. Public meetings to encourage owner cooperation with soil and water conservation districts are reported. A suggested statewide soil conservation progress reporting form is included in an appendix.

PLANNING AGENCY: GERP&DC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: RECLAIMED AGRICULTURE LAND/SOIL EROSION (TASK IV)

OUTPUT TITLE: Soil Erosion Potential of Reclaimed Agricultural Lands

ABSTRACT: The report contains a general discussion of the problems encountered in reclaiming mine lands for agricultural uses. No conclusions were reached about changes in productivity of land used for agriculture after mining and reclamation.

PLANNING AGENCY: GERP&DC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: WATER QUALITY PROBLEMS ARISING FROM LAND USE CONVERSION IN THE CEDAR LAKE WATERSHED (TASK V)

OUTPUT TITLE: Orchard Land Conversion and Water Quality (December, 1980)

ABSTRACT: This document describes potential water quality problems resulting from soil erosion after the conversion of orchard lands to other uses within the watershed of Cedar Lake.

PLANNING AGENCY: GERP & DC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: EROSION POTENTIAL OF RECLAIMED AGRICULTURAL LANDS IN PERRY COUNTY

OUTPUT TITLE: Completion Date - May 28, 1982

ABSTRACT: One thousand three-hundred acres of lands reclaimed to row crop capability by four mining companies in Perry County were assigned soil loss estimates using the Universal Soil Loss Equation.

Soil loss estimates were made using nine hypothetical crop rotation/tillage combinations. The major project objective was to predict what cropping and erosion management practices would be necessary to achieve the 1995 county targets for sediment and erosion control set by the Perry County Soil and Water Conservation District. The report concluded that 1995 Sediment and Erosion Control Standards are achievable on these reclaimed lands with varying levels of row crop production using common state-of-the-art management practices. Maps show the areas addressed in the report.

PLANNING AGENCY: GERP&DC
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part A

Agricultural Nonpoint Sources

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: ASSESSMENT OF AGRICULTURAL SEDIMENT DELIVERY TO SURFACE WATERS (BLUE CREEK) (TASK V B)

OUTPUT TITLE: Gross Erosion Assessment in the Blue Creek Watershed, Pike County, Illinois

ABSTRACT: Gross erosion assessment is a part of the erosion-sedimentation study in the Blue Creek Watershed. The objectives of the assessment are to: 1) inventory the present soil, land use, and conservation practice conditions in the field; 2) compute the present soil loss rates in the watershed based on the present conditions; and 3) compute soil loss rates based on a few selected management practices to simulate the change of soil loss rates.

In order to relate the gross erosion data to sedimentation data, a sub-watershed upstream of suspended sediment gaging station C, which is located at the Highway 107 bridge, was selected for detailed gross erosion study. There are 73 soil mapping units in the sub-watershed. The total drainage area is 3,272 acres. The Universal Soil Loss Equation was used to compute the soil loss rates.

Under the present conditions, the total amount of annual gross erosion is 41,096 tons. This is equivalent to an average annual soil loss rate of 12.6 tons per acre per year. The average soil loss rates in the soil mapping units show high standard deviations which mostly are due to different land use categories.

The soil loss rates were also sorted based on nine land use categories. Cropland is the dominant land use which covers about 58 percent of the watershed. The soil loss rate of the cropland is 18.1 tons which is the highest among all the land use categories. The second dominant land use is pasture which covers about 20 percent. The average soil loss rate from pasture is 4.4 tons per acre per year which is below the soil loss tolerance rate. The farmstead, residential, and hayland areas have relative small acreages. Their soil loss rates range from 0.2 to 5.5 tons per acre per year. The wildlife and woodland categories cover 7 percent (238) acres and 6 percent (186 acres) which have soil loss rates of 2.9 and 4.9 tons per acre per year, respectively. The other land uses consist of ideal, natural areas and small tract areas which were not defined in the inventory. This covers about 6 percent (188 acres) which has a soil loss rate of 11.9 tons per acre per year.

The potential gross erosion for various alternative erosion control practices was also determined during this study. The amount of gross erosion and past reservoir sediment surveys were used to derive a sediment delivery ratio. The result indicated that about 48 percent of the sediment was delivered to the lake.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: ASSESSMENT OF AGRICULTURAL SEDIMENT DELIVERY TO SURFACE WATERS (TASK V B)

OUTPUT TITLE: Economic Impacts on Individual Farm Management Units for Selected Management Scenarios in Blue Creek Watershed, Pike County Illinois

ABSTRACT: Three different management conditions were defined for each land management unit in the project area: 1) existing, 2) attainable (planned to be implemented as part of the Agricultural Conservation Program - Special Water Quality Project) and 3) ultimate (defined by the local D.C. as to what was most likely to be there long term). This paper is concerned with the effects that Resource Management Systems would have upon net income generated on individuals land management units and the resulting soil loss. The management scenarios showed 4 major trends: 1) a slight increase in rotation, 2) an increase in the number of negative net value land management units within the watersheds, 3) there were no major land use shifts between scenarios and 4) there is a significant decrease in erosion.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: ASSESSMENT OF AGRICULTURAL SEDIMENT DELIVERY TO SURFACE WATERS SUB TASK A. APPLICATION OF ADAPT TECHNOLOGY OF THE BLUE CREEK WATERSHED (TASK V B)

OUTPUT TITLE: Assessing Impacts of Cropland Management Practices on Potential Annual Erosion and Economic Factors for Individual Fields in Blue Creek Watershed (1981)

ABSTRACT: The Land Cover/Water Quality Relationships Project demonstrated the application of ADAPT for prioritization of areas for erosion control and for evaluation of the types of management practices to be employed at the basin and/or county-by-county level analysis. The initial evaluations were based solely on estimates of changes in total erosion and erosion rate and did not consider economic factors. These initial outputs were not intended to provide information at the detail required to evaluate specific field-level implementation strategies. The efforts of this second project were directed at developing these Field-by-Field level analyses, including economic considerations using the Blue Creek Watershed as the Project Study area.

A watershed base map was provided by IEPA on which discrete boundaries for the following land cover/use conditions were described: cropped fields, pasture/hayland (80% and 90% ground cover), managed woodland, unmanaged woodland, wildlife areas, farmsteads and feedlots. For each field in a row-crop rotation, the cropland management practices applicable to existing, attainable and ultimate management, conditions were defined by the Pike County District Conservationist.

The poject outputs show the impacts of the row-crop, field management practices on estimated erosion, and the economic analysis of the various row-crop field management practices. Outputs are in the form of multi-colored, shaped maps and computer generated tables. Tabular summaries were developed to show erosion and cost information by individual fields and by land use/cover type.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: DEVELOPMENT OF A STATEWIDE "METAL PESTICIDE CONTAINER RECYCLING PROGRAM" (TASK VC)

OUTPUT TITLE: Development of a Statewide "Metal Pesticide Container Recycling Program" (June 1980)

ABSTRACT: This report contains an evaluation of a four county-wide pesticide container collection drives conducted by Farm Bureau Young Farmer Committees in McLean, Macoupin, Montgomery and Livingston Counties during the summer of 1979. The ultimate goal of the research is to develop a system for recycling and/or landfill disposal of used metal pesticide containers, which has statewide applicability.

There were two portions of the study. One was a study of alternative methods of pesticide container rinsing, and the other was an evaluation of pilot county collection campaigns.

The study of rinsing methods showed there are procedures that rinse containers as thoroughly and more efficiently than the standard triple-rinse method. A paper describing a jet-spray nozzle technique is attached as Appendix I.

The second portion of the project studies the four county pilot projects. The four county collection campaigns were monitored to determine the most efficient methods of collecting and handling the containers. Location and number of collection sites, participant's attitudes, quantity and condition of cans collected and associated costs were evaluated.

Over 60,000 cans were collected in the four counties. Of 16,000 cans aggregated in McLean County, 99% were judged to have been properly rinsed.

An additional study was recommended for the 1980 agricultural season. The Illinois Agricultural Association via its County Farm Bureau members will organize six regional collection campaigns. Strategies and potential problems were discussed.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: LAND COVER/WATER QUALITY RELATIONSHIPS: SOIL EROSION POTENTIAL ANALYSIS AND LAKE WATERSHED ANALYSIS (TASK XIID)

OUTPUT TITLE: Data/Information Development for Assessing Impacts of Cropland Management Practices on Potential Annual Erosion (February 1981)

ABSTRACT: The ADAPT system was selected for modelling in the Blue Creek watershed because of its unique, state of the art features. ADAPT, (Areal design and planning tool) is a geo-based computer mapping and planning system. This computer modelling system represents a synthesis of two popular computer-based approaches to analysis and planning, 1) spatial/geographical data base; and 2) analytical mathematical modelling. The non-point source screening model, which uses the Universal Soil Loss Equation (USLE), was utilized to predict potential gross erosion.

USGS 7 1/2 minute maps provided the topographic and political boundaries, soil series data was provided by the Soil Conservation Service (SCS). Land use/cover in five categories was furnished by IEPA from aerial photos. USLE factors: C and P, were representative numbers provided by the SCS. The L factor, also obtained from SCS, was a representative figure for each soil series, the S factor (slope) was calculated by the ADAPT system.

A set of land management alternatives, representing use of one or a limited combination of management practices throughout the watershed, was developed through discussions with the Soil Conservation Service staff, representatives of Illinois Department of Agriculture and the consultant. Each alternative had the effect of changing the cover, cropping practice or slope length factors in the USLE. Calculation of total soil loss under these various circumstances gives a general idea of the relative effectiveness in this watershed of the different practices.

Results

The study concluded that the ADAPT system provides a cost-effective way for:

1. establishing project area priorities;
2. selecting Resource Management Systems for each priority area; and
3. estimating program costs and the need for cost-share funds.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: PROGRAM FOR DEVELOPING A PROGRESS REPORTING SYSTEM FOR SOIL AND WATER CONSERVATION DISTRICTS (TASK II A)

OUTPUT TITLE: Progress Reporting System

ABSTRACT: 1) The State and Areawide Water Quality Management Plans designate the State Department of Agriculture and the Soil and Water Conservation Districts as management agencies for control of agricultural erosion nonpoint sources. Management agencies are required to submit progress reports to the 208 planning agencies, so that they, in turn may meet Federal Water Pollution Control Act requirements. Additionally, the Soil and Water Conservation Districts (SWCD) Act of 1978 requires the Illinois Department of Agriculture (IDOA) to develop erosion and sediment control guidelines and each SWCD to establish a soil erosion and sediment control program and standards.

Certain goals for the soil erosion control program have been established by the IDOA in fulfillment of State law. These goals are consistent with those established by IEPA in the Illinois Water Quality Management plan. This report identifies items of information and a format for each SWCD to use in reporting progress toward the goals.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: PROGRAM FOR DEVELOPING A PROGRESS REPORTING SYSTEM FOR SOIL AND WATER CONSERVATION DISTRICTS (TASK II A)

OUTPUT TITLE: Prototype Inventory and Progress Reporting System

ABSTRACT: Soil and Water Conservation Districts (SWCD) are experiencing a drastic increase in their responsibilities and workloads. The change to larger programs, with increased staff and funding must be dealt with in an efficient manner. In order to do this, local Districts need a clear picture of their priorities, and an adequate progress reporting system must be implemented.

This report on the methodology of inventorying, mapping and evaluating, developed in Livingston County, is intended as a guide to other Soil and Water Conservation Districts in locating, identifying and quantifying their priority areas.

The methodology that evolved from this study stresses the utilization of basic data available to any SWCD in Illinois. The study was conducted in two phases. In phase one, USGS topographic maps and the general soils map of Livingston County were combined and interpreted to approximate the factors of "LS" and "K" of the Universal Soil Loss Equation (USLE).

Average soil loss in the areas delineated during phase one was estimated using the best available data in phase two.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY 79

PROJECT TITLE: CONTINUATION OF ASSESSMENT OF AGRICULTURAL SEDIMENT DELIVERY TO SURFACE WATER (TASK II B)

OUTPUT TITLE: Water Resource Data and Preliminary Trend Analysis for the Blue Creek Watershed, Pike County, Illinois - Phase I.

ABSTRACT: The purpose of this report is to present and briefly interpret preliminary trends in water quality data collected from project inception thru September 30, 1980 as part of the Blue Creek Watershed project. This discussion covers less than one full water year's worth of data.

The primary purpose of this monitoring and evaluation project is to determine the actual yield of pollutants from a variety of agricultural practices to downstream receiving water and its effect upon the water quality and reasonable uses of the water resources. Monitoring and evaluation of actual Resource Management System implementation progress on sub-watersheds and yield of pollutants to the major tributary stream and public water supply lake will allow a reliable comparison of low and high-cost practices and downstream yield reductions, evaluation of cause and effect relationships between a variety of practices, determination of nonpoint source yields for the selection of lands requiring treatment to reduce water quality problems, and the impact of Resource Management systems on both stream and lake quality. The observations and explanations are only preliminary in nature and should not be considered absolute conclusions.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '80

PROJECT TITLE: DEVELOPMENT OF A CONSERVATION TILLAGE INFORMATION PROGRAM (TASK II C)

OUTPUT TITLE: Model Plan of Work for a Conservation Tillage Information and Education Program (April 1981)

ABSTRACT: Conservation tillage is an innovative farming technique that is being used in Illinois. It is a cost-effective and acceptable method of soil erosion control on agricultural lands. Soil and Water Conservation District's play an important role in conservation tillage application and the education that is necessary to accomplish application.

This report describes a model plan of work which will help Soil and Water Conservation Districts to plan a successful conservation tillage program. The model plan of work for a conservation tillage information and education program was developed by the Adams County Soil and Water Conservation District. It is available for adaptation by Districts to fit their needs. A sound program plan results in land application. Since conservation tillage is a cultural practice as opposed to a structural conservation practice, education is an important part of any conservation tillage program. In addition to program planning, coordination of conservation tillage projects is also a necessity. Soil and Water Conservation Districts need to take a leadership role in coordinating conservation tillage education and information projects with the Agricultural Extension Council and Cooperative Extension Service, Soil Conservation Service, Agricultural Stabilization Conservation Service, Illinois Department of Agriculture, chemical companies, and equipment companies. Two pamphlets were also written under this project these are Adams County 1980 Conservation Tillage Records and Adams County 1981 Conservation Tillage Records.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: MONITORING AND EVALUATION OF THE EFFECT OF APPLIED AGRICULTURAL BMP'S ON WATER QUALITY IN THE BLUE CREEK WATERSHED (CONTINUATION OF ASSESSMENT OF AGRICULTURAL SEDIMENT DELIVERY TO SURFACE WATERS) (TASK VB)

OUTPUT TITLE: Blue Creek Watershed Project Pike County, Illinois (May 1979 - October 1980)

ABSTRACT: This report details the background, purpose, and monitoring strategy of the Blue Creek Watershed Project. This report also delineates all studies that are being continued or have been completed that supplement the tributary monitoring.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: DEVELOPMENT OF A TOXIC BIO-INDEX FIELD PROTOCOL FOR CONTROL OF PESTICIDE PROBLEMS (80-56)

OUTPUT TITLE: Development of an Instream Monitor for Persistent Pollutants, Phase II

ABSTRACT: The study described in this report is an extension of an earlier exploratory project which demonstrated the use of the freshwater clam, Corbicula manilensis, as a biomonitor for persistent pollutants. Caged Corbicula were implanted at several sites in the state of Illinois, especially in waters used as potable water supplies or receiving National Pollution Discharge Elimination System (NPDES) effluents. As in the previous study, these Corbicula were retrieved and analyzed for persistent chlorinated hydrocarbon pesticides. In addition, work was undertaken to extend the number and kinds of indicators of pollution that could be measured using implanted clams. The first such work sought to assay the level of mixed function oxygenases, enzymes that can reflect exposure to toxic substances in other organisms. Next, work was undertaken to define the conditions for the extraction of persistent mutagenic substances accumulated by clams, assaying them using the Ames Salmonella/microsome reversion assay (Ames test). Finally the uptake of heavy metals by clams was to be explored.

To evaluate the clam's ability to indicate pollution, parallel sets of clams were implanted above and below four special sites consisting of one metropolitan region and three points of effluent discharge. In each case the clams implanted above the site were compared to those implanted below to detect the discharge's influence. In addition, a sample of the effluent discharged (for a sample of the river water just below the metropolitan region) were taken for analysis using gas chromatography/mass spectrometry (GC/MS) and the Ames test. The composition and mutagenicity of these effluents were to be compared to the composition and mutagenicity of the clam extracts, providing a test of the clam's ability to reflect a broad range of certain pollutant in their environment.

It was concluded that Corbicula manilensis can be implanted and retrieved in fresh waters, and are useful as accumulators of chlorinated hydrocarbon pesticides, however, additional work must be done to refine the methodology before the full potential of the method is known.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'80

PROJECT TITLE: MONITORING AND EVALUATION OF THE EFFECT OF APPLIED AGRICULTURAL BMP'S ON WATER QUALITY IN BLUE CREEK WATERSHED (80-62)

OUTPUT TITLE: Water Resource Data and Preliminary Trend Analysis for the Blue Creek Watershed, Pike County, Illinois - Phase II. Anticipated Completion Date - July 1982.

ABSTRACT: The purpose of this report is to present and briefly interpret preliminary trends in water quality data collected from project inception thru November 31, 1981 as part of the Blue Creek Watershed project. The primary purpose of this monitoring and evaluation project is to determine the actual yield of pollutants from a variety of agricultural practices to downstream receiving water and its effect upon the water quality and reasonable uses of the water resources. Monitoring and evaluation of actual Resource Management System implementation progress on sub-watersheds and yield of pollutants to the major tributary stream and public water supply lake will allow a reliable comparison of low and high-cost practices and downstream yield reductions, evaluation of cause and effect relationships between a variety of practices, determination of non point source yields for the selection of lands requiring treatment to reduce water quality problems, and the impact of Resource Management systems on both stream and lake quality. The observations and explanations are only preliminary in nature and should not be considered absolute conclusions.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'80

PROJECT TITLE: INSTITUTIONALIZATION OF THE AGRICULTURAL BMP COST SHARING SYSTEM (80-63)

OUTPUT TITLE: "Farm Owner/Operator's Guide to Technical, Financial Assistance and Incentive Programs for Implementing soil Erosion and Water Pollution Control Practices"

This booklet will assist the farmer in implementing best management practices/systems on his land. The booklet consists of three sections; the first section describes the decision making process of choosing which practices or system to be implemented, the second section delineates the available programs that will aid the farmer once he has made his decision and the third section consists of case studies concerning the use of the actual programs under various conditions.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'80

PROJECT TITLE: MONITORING AND EVALUATION OF THE EFFECT OF APPLIED AGRICULTURAL BMP'S ON WATER QUALITY IN THE BLUE CREEK WATERSHED (81-64)

OUTPUT TITLE: Water Resource Data and Preliminary Trend Analysis for the Blue Creek Watershed, Pike County, Illinois - Phase III. Anticipated Completion Date - September 1983.

ABSTRACT: The purpose of this report is to present and briefly interpret preliminary trends in water quality data collected from project inception thru October, 1982 as part of the Blue Creek Watershed project. The primary purpose of this monitoring and evaluation project is to determine the actual yield of pollutants from a variety of agricultural practices to downstream receiving water and its effect upon the water quality and reasonable uses of the water resources. Monitoring and evaluation of actual Resource Management System implementation progress on sub-watersheds and yield of pollutants to the major tributary stream and public water supply lake will allow a reliable comparison of low and high-cost practices and downstream yield reductions, evaluation of cause and effect relationships between a variety of practices, determination of non point source yields for the selection of lands requiring treatment to reduce water quality problems, and the impact of Resource Management systems on both stream and lake quality. The observations and explanations are only preliminary in nature and should not be considered absolute conclusions.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'81

PROJECT TITLE: AGRICULTURAL NON-POINT SOURCE STRATEGY (81-71)

OUTPUT TITLE: Anticipated Completion Date -

ABSTRACT: This agricultural implementation strategy will specify policies, procedures and operational programs required to meet the goals of the 208 plan. The implementation strategy will concentrate on the prioritization of treatment for lands that are contributing to instream water quality problems. The necessary financial and institutional resources required to implement the most cost-effective control strategies to achieve the goals and objectives of the Clean Water Act will be considered. In addition, this state-wide strategy will define the functional roles of federal, state and local agencies (organizations) and develop a method of accountability of programs and projects. The Soil Erosion and Water Quality Advisory Committee will develop the necessary policies and procedures required to meet the objective of this implementation strategy. The sub-committee will rank treatment by basin or region.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part A

Agricultural Nonpoint Sources

Projects of the Northeastern Illinois Planning Commission

PROJECT TITLE: EXTENSION OF AGRICULTURAL SOIL EROSION STUDIES

OUTPUT TITLE: Project was dropped by grant amendment proposal dated 10/16/78. It was to be revived as part of the FFY 80 or FFY 81 program.

ABSTRACT:

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: ESTABLISH PRIORITIES FOR IMPLEMENTING AGRICULTURAL BMP's (URPP 1017) (TASK 19)

OUTPUT TITLE: Establishing Priorities for Implementing Agricultural Best Management Practices (March 1980)

ABSTRACT: The purpose of this study was to develop a system to identify the most erodible soils in the six county area of Northeastern Illinois. In addition, criteria to determine the percentage of eroded soils entering water bodies were to be developed.

The study concluded that computer models using the Universal Soil Loss Equation were the most accessible and best methods available to calculate sediment delivery ratios.

A prototype study was done in McHenry County to identify areas contributing large amounts of sediment to local streams. A follow-up study to determine actual sediment loadings to streams and how these could be reduced was recommended.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: MODEL CONSERVATION NEEDS INVENTORY AND PROGRESS REPORTING SYSTEM FOR SOIL AND WATER CONSERVATION DISTRICTS (URPP 1024) (TASK 14)

OUTPUT TITLE: Model Conservation Needs Inventory and Progress Reporting System for Soil and Water Conservation Districts (September 1980)

ABSTRACT: This report discusses: current methods for estimating soil erosion losses, sediment delivery ratios and sedimentation rates, describes a study in McHenry County which classified sensitivity of soil types to erosion and setting a priority scheme for soil erosion control.

A sample progress reporting form, for use by local Soil and Water Conservation Districts is included with a brief discussion of the need for regular progress reporting.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: DEVELOP BMP IMPLEMENTATION PLAN FOR AGRICULTURALLY IMPACTED SMALL WATERSHED (STAGE 1) (URPP 1024.01)

OUTPUT TITLE: Development of BMP Implementation Plan for Agriculturally Impacted Small Watershed (Stage 1) -- Anticipated Completion Date - September 30, 1982

ABSTRACT: The objective of this project is to explore the political, social, economic, and technical factors involved in the implementation of an agricultural BMP program for a small agricultural watershed with demonstrated soil erosion problems. Through the implementation of BMP practices on critical erosion areas, improvement in water quality of both the receiving stream and water bodies further downstream will be investigated.

The target small watershed for this project is Woods Creek, which is tributary to Lake-In-The-Hills in southeastern McHenry County. The project is being coordinated by the Commission in cooperation with the McHenry County Soil and Water Conservation District and the USDA Soil Conservation Service. Expected completion date is September 30, 1982.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part A

Agricultural Nonpoint Sources

Projects of the Southwestern Illinois Metropolitan and
Regional Planning Commission

PROJECT TITLE: DETERMINATION OF PRIORITIES FOR CONSERVATION PLANS (TASK 7)

OUTPUT TITLE: Critical Area Priorities (August 1978)

ABSTRACT: The 208 Water Quality Management Plan for Madison, Monroe and St. Clair Counties, Illinois, completed in May, 1978, recognized the need to reduce erosion from agricultural lands in diminishing the impact of sediment on water quality. The study also demonstrated the occurrence of excessive erosion rates in the highly dissected, deep loess within the 208 planning area.

As a result the plan recommended that these highly erosive areas (Critical Areas) be delineated and prioritized for technical assistance by the Madison, Monroe and St. Clair County Soil and Water Conservation Districts. Completion of Critical Area delineation and prioritization was scheduled for August, 1978 and inclusion of these priorities in SWCD annual and long-range plans by December, 1978.

The activities generated by this task and the resulting Critical Area delineations and prioritizations are the subject of this report. The material presented is organized to provide a description of (1) the methodologies utilized in delineating and prioritizing critical erosion areas; (2) the Critical Area priorities established as a result of this study; and (3) the impact of public involvement throughout the project.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '77 Supplemental

PROJECT TITLE: A COMPARATIVE STUDY OF TWO SMALL AGRICULTURAL WATERSHEDS (TASK 8)

OUTPUT TITLE: Agricultural Watersheds Testing Program: Phase I (Report SWIL-MAPC 80-05 January 1980)

ABSTRACT:

This report documents water quality sampling activities in two small agricultural watersheds, conducted under the 208 Continuing Planning Program. It provides a description of site selection and preparation processes, site conditions, water quality constituents and sampling equipment. Sampling results from the six-month sampling period are presented and analyzed, and project adjustments to be made for the second phase of sampling are briefly discussed.

The data that was secured seemed to indicate that BMPs would reduce erosion and related pollutants. Additional study was suggested so that the effectiveness of the BMP's could be further quantified.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: AGRICULTURAL WATERSHEDS STUDY: EVALUATION OF EROSION CONTROL BEST MANAGEMENT PRACTICES PHASE II (TASK 2)

OUTPUT TITLE: Agricultural Watersheds Testing Program: Phases I and II (Report SWIL-MAPC 80-31, December 1980)

ABSTRACT: This report documents water quality sampling activities in two small agricultural watersheds, conducted under the 208 Continuing Planning Program. It provides a description of site selection and preparation process, site conditions, and water quality constituents and sampling equipment. Sampling results from both the Phase I and Phase II sampling periods are presented and analyzed.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: MODEL DEMONSTRATION PROGRAM FOR DEVELOPING A PROGRESS REPORTING SYSTEM FOR SOIL & WATER CONSERVATION DISTRICTS (TASK 3)

OUTPUT TITLE: Reporting System for Soil and Water Conservation Districts (Report SWIL-MAPC 80-24 August 1980)

ABSTRACT: This report documents a methodology developed for Soil & Water Conservation Districts to inventory lands within a district, determine critical areas contributing to water quality problems and prioritize these areas for 208 plan implementation. A progress reporting system which will enable districts to monitor plan implementation is the end product of this project.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: PESTICIDE CONTAINER DISPOSAL PROGRAM FEASIBILITY STUDY AND AREAWIDE PLAN DEVELOPMENT (TASK 7)

OUTPUT TITLE: Pesticide Container Disposal Program (Report SWIL-MAPC 81-07, March 1981)

ABSTRACT: This report documents the activities involved in the development and initiation of county wide pesticide container recycling programs for Madison, St. Clair and Monroe counties.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: DEVELOP OPERATIONAL CONTROL PROGRAMS IN AGRICULTURAL NPS CRITICAL AREAS (TASK #1)

OUTPUT TITLE: Upper Fountain Creek Watershed Management Plan (Report SWIL-MAPC 81-11) (August 1981)

This report investigates soil loss and sedimentation problems in Upper Fountain Creek Watershed, Monroe County, Illinois. It provides a description of the physical, hydrologic and socio-cultural characteristics of the Watershed. Soil losses and water quality conditions are assessed. Alternative plans for water quality improvement are presented, and the plan selected by the Designated Management Agency is detailed.

PLANNING AGENCY: SIMPAC
FEDERAL FUNDING CYCLE: FFY'80

PROJECT TITLE: DEVELOP OPERATIONAL CONTROL PROGRAM IN NONPOINT SOURCE CRITICAL AREAS - FRANK HOLTEN STATE PARK WATERSHED (TASK #2)

OUTPUT TITLE: New Completion Date - December 31, 1982

ABSTRACT: This program was initiated in 1981, in response to USEPA encouragement to augment the Sec. 314 Clean Lakes Project for Frank Holten State Park Lakes with a nonpoint source control program for the Watershed. Major work activities involved in this task include the following:

1. Assemble and analyze existing data including surface and groundwater quantity/guality data, land use data.
2. Develop and conduct water quality sampling program; analyze data in relationship to hydrology, land use and soil losses.
3. Summarize data; determine NPS problem areas.
4. Develop site-specific alternatives for control of identified NPS problems.
5. Prioritize NPS control alternatives.
6. Present alternatives to appropriate DMAs and affected parties for review and input.
7. Develop implementation strategy for selected alternative.

The major output of this task will be a locally acceptable plan to control NPS problems in Frank Holten State Park Watershed.

PLANNING AGENCY: SIMPAC
FEDERAL FUNDING CYCLE: FFY'81

PROJECT TITLE: INNOVATIVE TECHNIQUES IN DEEP LOESSIAL SOILS (PHASE I) (TASK #3)

OUTPUT TITLE: Innovative Techniques in Deep Loessial Soils (Report SWIL-MAPC 80-30) (February 1981)

This report documents results of 208 Continuing Planning Program efforts to demonstrate an innovative Best Management Practice to farmers in deep loessial soils areas. This potential Best Management Practice, which involves growing corn in a living sod, is intended to provide farmers with an alternative to "land conversions" in order to reduce soil losses to acceptable levels and yet maintain respectable yields.

A narrative for a slide presentation is included.

PLANNING AGENCY: SIMPAC
FEDERAL FUNDING CYCLE: FFY'80

PROJECT TITLE: INNOVATIVE TECHNIQUES IN DEEP LOESSAL SOILS (PHASE II) (TASK #4)

OUTPUT TITLE: Innovative Techniques in Deep Loessal Soils: Phase II (Report SWIL-MAPC 82-02, January 1982)

This report documents results of second-year efforts to demonstrate an innovative Best Management Practice (BMP) to farmers in deep loessal soils areas. This potential BMP, which involves growing corn in a living sod, is intended to provide farmers with an alternative to "land conversions" in order to reduce soil losses to acceptable levels and yet maintain respectable yields. Planting, tillage and harvesting methods are discussed, data is analyzed, and the project is evaluated in terms of production costs farmer reactions, reduction in soil losses, and transferability and regional impact. Finally, a general strategy is presented for consideration by the St. Clair County Soil and Water Conservation District (SWCD), if further evaluation leads to efforts to promote the technique as a Best Management Practice.

PLANNING AGENCY: SIMPAC
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part B

Urban Stormwater/Construction Erosion Management

208 PLANNING IN ILLINOIS

Part B

Urban Stormwater/Construction Erosion Management

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: CONDUCT URBAN STORMWATER STUDIES FOR EIGHT SMSA's (TASK IV A)

OUTPUT TITLE: Urban Stormwater Management - Final Report Bloomington-Normal (1979)

ABSTRACT: Chapters one through four of this Report describe work done by the Illinois State Water Survey (ISWS) during the Urban Runoff Problem Assessments for the eight SMSAs in Illinois. Chapter four is the final version of the problem assessment presented to the local steering committee in each SMSA. Background information about Bloomington was assembled. This included information about natural and artificial drainage, point discharges, present and future plans for land and water management, and records of previous or ongoing water quality monitoring. A water sampling program was conducted in each study area, with samples being collected at several points on small urban streams and larger receiving waters during normal dry-weather flow and stormflow conditions. The samples were analyzed for a broad range of constituents to identify water quality problems which could be associated with urban runoff. The General Use Water Quality Standards of the Illinois Pollution Control Board were used as standards of comparison for judging the quality of urban storm runoff. Small urban basins were chosen for thorough monitoring during storm runoff events and subsequent modeling using a hydrologic and water quality computer simulation model called QUAL-ILLUDAS. The model was used as a tool in estimating pollutant washoff storms, and for predicting pollutant washoff from the entire study area for design storms. A receiving water model was employed to simulate the effects of loadings from the urban area on the quality of streams which receive substantial quantities of runoff. By relating the probability of a runoff event to the effects it would produce, a probable frequency of occurrence was established for different levels of critical constituents in urban streams and receiving waters.

At summary point E the surface component of urban stormflow in Sugar Creek can produce levels of lead, copper, and iron which exceed water quality standards more than 24 times per year. Excessive concentrations of zinc and ammonia can be expected at least once a year, and high values for total solids, suspended solids, and BOD between 1 and 9 times per year.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '77 Initial 208 Grant

PROJECT TITLE: CONDUCT URBAN STORMWATER STUDIES FOR EIGHT SMSA's (TASK IV A)

OUTPUT TITLE: Urban Stormwater Management - Final Report Champaign-Urbana (1979)

ABSTRACT: Chapters one through four of this Report describe work done by the Illinois State Water Survey (ISWS) during the Urban Runoff Problem Assessments for the eight SMSAs in Illinois. Chapter four is the final version of the problem assessment presented to the local steering committee in each SMSA. Background information about Champaign was assembled. This included information about natural and artificial drainage, point discharges, present and future plans for land and water management, and records of previous or ongoing water quality monitoring. A water sampling program was conducted in each study area, with samples being collected at several points on small urban streams and larger receiving waters during normal dry-weather flow and stormflow conditions. The samples were analyzed for a broad range of constituents to identify water quality problems which could be associated with urban runoff. The General Use Water Quality Standards of the Illinois Pollution Control Board were used as standards of comparison for judging the quality of urban storm runoff. Small urban basins were chosen for thorough monitoring during storm runoff events and subsequent modeling using a hydrologic and water quality computer simulation model called QUAL-ILLUDAS. The model was used as a tool in estimating pollutant washoff storms, and for predicting pollutant washoff from the entire study area for design storms. A receiving water model was employed to simulate the effects of loadings from the urban area on the quality of streams which receive substantial quantities of runoff. By relating the probability of a runoff event to the effects it would produce, a probable frequency of occurrence was established for different levels of critical constituents in urban streams and receiving waters.

According to the predictions for the summary points and the receiving stream, levels of lead, copper, and iron can be expected to exceed standards 20 to 30 times per year. Though dissolved solids will rarely exceed its standard and suspended solids has no standard, both are likely to occur frequently in levels high enough to cause concern. Champaign-Urbana was the only study area in which mercury was regularly observed in stormwater samples. There is no obvious source of mercury in the area.

Both IEPA water quality monitoring data and ISWS normal flow sampling indicate that there are no general dissolved oxygen (D.O.) problems in the Boneyard or the Saline. Most normal flow samples showed D.O. levels of 7.0-9.0 mg/l.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '77 Initial 208 Grant

PROJECT TITLE: CONDUCT URBAN STORMWATER STUDIES FOR EIGHT SMSA's (TASK IV A)

OUTPUT TITLE: Urban Stormwater Management - Final Report Decatur (1979)

ABSTRACT: Chapters one through four of this Report describe work done by the Illinois State Water Survey (ISWS) during the Urban Runoff Problem Assessments for the eight SMSAs in Illinois. Chapter four is the final version of the problem assessment presented to the local steering committee in each SMSA. Background information about Decatur was assembled. This included information about natural and artificial drainage, point discharges, present and future plans for land and water management, and records of previous or ongoing water quality monitoring. A water sampling program was conducted in each study area, with samples being collected at several points on small urban streams and larger receiving waters during normal dry-weather flow and stormflow conditions. The samples were analyzed for a broad range of constituents to identify water quality problems which could be associated with urban runoff. The General Use Water Quality Standards of the Illinois Pollution Control Board were used as standards of comparison for judging the quality of urban storm runoff. Small urban basins were chosen for thorough monitoring during storm runoff events and subsequent modeling using a hydrologic and water quality computer simulation model called QUAL-ILLUDAS. The model was used as a tool in estimating pollutant washoff storms, and for predicting pollutant washoff from the entire study area for design storms. A receiving water model was employed to simulate the effects of loadings from the urban area on the quality of streams which receive substantial quantities of runoff. By relating the probability of a runoff event to the effects it would produce, a probable frequency of occurrence was established for different levels of critical constituents in urban streams and receiving waters.

These results show that lead, copper, and iron concentrations in urban runoff may occur at levels 8 times the general water quality standards one time per year. Lead and copper may exceed standards 20 to 25 times per year, and iron up to 35 times per year. It has further been shown that suspended solids and BOD_5 frequently occur at levels higher than those permitted from point source. The phosphorus concentrations in tributaries draining directly to Lake Decatur exceed the 0.05 mg/l standard 25 to 30 times per year, and may occur once a year at levels 10 to 15 times the standard.

Normal flow samples showed average D.O. concentration below the 6.0 mg/l level only a point 1. Stormflow average concentrations were all above the 5.0 mg/l minimum, but several individual samples were below it.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '77 Initial 208 Grant

PROJECT TITLE: CONDUCT URBAN STORMWATER STUDIES FOR EIGHT SMSA's (TASK IV A)

OUTPUT TITLE: Urban Stormwater Management - Final Report Kankakee (1979)

ABSTRACT: Chapters one through four of this Report describe work done by the Illinois State Water Survey (ISWS) during the Urban Runoff Problem Assessments for the eight SMSAs in Illinois. Chapter four is the final version of the problem assessment presented to the local steering committee in each SMSA. Background information about Kankakee was assembled. This included information about natural and artificial drainage, point discharges, present and future plans for land and water management, and records of previous or ongoing water quality monitoring. A water sampling program was conducted in each study area, with samples being collected at several points on small urban streams and larger receiving waters during normal dry-weather flow and stormflow conditions. The samples were analyzed for a broad range of constituents to identify water quality problems which could be associated with urban runoff. The General Use Water Quality Standards of the Illinois Pollution Control Board were used as standards of comparison for judging the quality of urban storm runoff. Small urban basins were chosen for thorough monitoring during storm runoff events and subsequent modeling using a hydrologic and water quality computer simulation model called QUAL-ILLUDAS. The model was used as a tool in estimating pollutant washoff storms, and for predicting pollutant washoff from the entire study area for design storms. A receiving water model was employed to simulate the effects of loadings from the urban area on the quality of streams which receive substantial quantities of runoff. By relating the probability of a runoff event to the effects it would produce, a probable frequency of occurrence was established for different levels of critical constituents in urban streams and receiving waters.

This study has shown that lead, copper, and iron concentrations in urban runoff may be expected to occur at levels 10 to 14 times the general use water quality standards one time per year. Lead and copper may exceed standards 25 to 30 times per year, and iron up to 35 times per year. It has further shown that suspended solids and BOD are frequently at levels higher than those permitted from point sources. Normal flow samples did not indicate any consistent D.O. problems at the sampling points, though one sample from point 3 and another from point 4 did fall below the standard. Stormflow samples from the five points almost always showed D.O. values above 7.0 mg/l.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '77 Initial 208 Grant

PROJECT TITLE: CONDUCT URBAN STORMWATER STUDIES FOR EIGHT SMSA's (TASK IV A)

OUTPUT TITLE: Urban Stormwater Management - Final Report Peoria (1979)

ABSTRACT: Chapters one through four of this Report describe work done by the Illinois State Water Survey (ISWS) during the Urban Runoff Problem Assessments for the eight SMSAs in Illinois. Chapter four is the final version of the problem assessment presented to the local steering committee in each SMSA. Background information about Peoria was assembled. This included information about natural and artificial drainage, point discharges, present and future plans for land and water management, and records of previous or ongoing water quality monitoring. A water sampling program was conducted in each study area, with samples being collected at several points on small urban streams and larger receiving waters during normal dry-weather flow and stormflow conditions. The samples were analyzed for a broad range of constituents to identify water quality problems which could be associated with urban runoff. The General Use Water Quality Standards of the Illinois Pollution Control Board were used as standards of comparison for judging the quality of urban storm runoff. Small urban basins were chosen for thorough monitoring during storm runoff events and subsequent modeling using a hydrologic and water quality computer simulation model called QUAL-ILLUDAS. The model was used as a tool in estimating pollutant washoff storms, and for predicting pollutant washoff from the entire study area for design storms. A receiving water model was employed to simulate the effects of loadings from the urban area on the quality of streams which receive substantial quantities of runoff. By relating the probability of a runoff event to the effects it would produce, a probable frequency of occurrence was established for different levels of critical constituents in urban streams and receiving waters.

Lead, copper, and iron concentrations in urban runoff may be expected to occur at levels 8 to 10 times the general use water quality standards one time per year. Lead and copper may exceed standards 20 to 25 times per year and iron up to 35 times per year. It has further shown that suspended solids and BOD are frequently at levels higher than those permitted from point source. Sampling D.O. showed no problems at any of the sampling sites during either normal flow or stormflow conditions.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '77 Initial 208 Grant

PROJECT TITLE: CONDUCT URBAN STORMWATER STUDIES FOR EIGHT SMSA's

OUTPUT TITLE: Urban Stormwater Management - Final Report Quad Cities (1979)

ABSTRACT: Chapters one through four of this Report describe work done by the Illinois State Water Survey (ISWS) during the Urban Runoff Problem Assessments for the eight SMSAs in Illinois. Chapter four is the final version of the problem assessment presented to the local steering committee in each SMSA. Background information about Quad Cities was assembled. This included information about natural and artificial drainage, point discharges, present and future plans for land and water management, and records of previous or ongoing water quality monitoring. A water sampling program was conducted in each study area, with samples being collected at several points on small urban streams and larger receiving waters during normal dry-weather flow and stormflow conditions. The samples were analyzed for a broad range of constituents to identify water quality problems which could be associated with urban runoff. The General Use Water Quality Standards of the Illinois Pollution Control Board were used as standards of comparison for judging the quality of urban storm runoff. Small urban basins were chosen for thorough monitoring during storm runoff events and subsequent modeling using a hydrologic and water quality computer simulation model called QUAL-ILLUDAS. The model was used as a tool in estimating pollutant washoff storms, and for predicting pollutant washoff from the entire study area for design storms. A receiving water model was employed to simulate the effects of loadings from the urban area on the quality of streams which receive substantial quantities of runoff. By relating the probability of a runoff event to the effects it would produce, a probable frequency of occurrence was established for different levels of critical constituents in urban streams and receiving waters.

Standards violations can be expected to occur 20 to 30 times per year with lead, iron and copper. Dissolved and suspended solids are also frequently excessive.

Both IEPA water quality monitoring and Illinois State Water Survey normal flow sampling indicate that there are no general dissolved oxygen problems in the Rock River or its tributaries.

Normal flow samples from all sites showed D.O. levels of 8.0-12.0 mg/l.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '77 Initial 208 Grant

PROJECT TITLE: CONDUCT URBAN STORMWATER STUDIES FOR EIGHT SMSA's (TASK IV A)

OUTPUT TITLE: Urban Stormwater Management - Final Report Rockford (1979)

ABSTRACT: Chapters one through four of this Report describe work done by the Illinois State Water Survey (ISWS) during the Urban Runoff Problem Assessments for the eight SMSAs in Illinois. Chapter four is the final version of the problem assessment presented to the local steering committee in each SMSA. Background information about Rockford was assembled. This included information about natural and artificial drainage, point discharges, present and future plans for land and water management, and records of previous or ongoing water quality monitoring. A water sampling program was conducted in each study area, with samples being collected at several points on small urban streams and larger receiving waters during normal dry-weather flow and stormflow conditions. The samples were analyzed for a broad range of constituents to identify water quality problems which could be associated with urban runoff. The General Use Water Quality Standards of the Illinois Pollution Control Board were used as standards of comparison for judging the quality of urban storm runoff. Small urban basins were chosen for thorough monitoring during storm runoff events and subsequent modeling using a hydrologic and water quality computer simulation model called QUAL-ILLUDAS. The model was used as a tool in estimating pollutant washoff storms, and for predicting pollutant washoff from the entire study area for design storms. A receiving water model was employed to simulate the effects of loadings from the urban area on the quality of streams which receive substantial quantities of runoff. By relating the probability of a runoff event to the effects it would produce, a probable frequency of occurrence was established for different levels of critical constituents in urban streams and receiving waters.

This study has shown that lead, copper, and iron concentrations in urban runoff exceed general use water quality standards 25 to 30 times per year. It has further shown that zinc and ammonia standards will occasionally be exceeded and that suspended solids and BOD_5 in urban runoff are frequently higher than the levels permitted from point sources.

Sampling in Rockford during both storm and normal flow conditions indicated no general dissolved oxygen problems in the Rock River or its tributaries.

Normal flow samples from all stations showed D.O. levels in the range of 6.8-12.8 mg/l, while stormflow D.O. levels fell in the range 5.2-10.8 mg/l.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '77 Initial 208 Grant

PROJECT TITLE: CONDUCT URBAN STORMWATER STUDIES FOR EIGHT SMSA's (TASK IV A)

OUTPUT TITLE: Urban Stormwater Management - Final Report Springfield (1979)

ABSTRACT: Chapters one through four of this Report describe work done by the Illinois State Water Survey (ISWS) during the Urban Runoff Problem Assessments for the eight SMSAs in Illinois. Chapter four is the final version of the problem assessment presented to the local steering committee in each SMSA. Background information about Springfield was assembled. This included information about natural and artificial drainage, point discharges, present and future plans for land and water management, and records of previous or ongoing water quality monitoring. A water sampling program was conducted in each study area, with samples being collected at several points on small urban streams and larger receiving waters during normal dry-weather flow and stormflow conditions. The samples were analyzed for a broad range of constituents to identify water quality problems which could be associated with urban runoff. The General Use Water Quality Standards of the Illinois Pollution Control Board were used as standards of comparison for judging the quality of urban storm runoff. Small urban basins were chosen for thorough monitoring during storm runoff events and subsequent modeling using a hydrologic and water quality computer simulation model called QUAL-ILLUDAS. The model was used as a tool in estimating pollutant washoff storms, and for predicting pollutant washoff from the entire study area for design storms. A receiving water model was employed to simulate the effects of loadings from the urban area on the quality of streams which receive substantial quantities of runoff. By relating the probability of a runoff event to the effects it would produce, a probable frequency of occurrence was established for different levels of critical constituents in urban streams and receiving waters.

This study has shown that lead, copper, and iron concentrations in urban runoff may occur at levels 8 to 15 times the general use water quality standards one time per year. Ammonia may double the general water quality standard once each year and will exceed the standard 6 to 8 times per year. In addition, suspended solids and BOD are frequently at levels higher than those permitted from point source. Tributaries draining directly to Lake Springfield exceed the 0.05 mg/l standard for total phosphorus frequently, reaching levels of 30 to 40 times the standard.

Normal flow samples analyzed for D.O. indicate a problem in Spring Creek, as samples from points 1 and 5 were well under the standard on one occasion and just slightly over it on another. Points 2 and 4, representing small urban streams, showed a similar but less extreme behavior. No stormflow samples were analyzed for D.O.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '77 Initial 208 Grant

PROJECT TITLE: NURP - PILOT PROJECT TO DEMONSTRATE EFFECTIVENESS OF STREET SWEEPING PROGRAM

OUTPUT TITLE: Evaluation of the Effectiveness of Municipal Street Sweeping In The Control of Urban Storm Runoff Pollution (April 1981)

ABSTRACT: Since June 1979 a study to determine the effects of municipal street sweeping on urban storm runoff quality has been conducted by the Illinois State Water Survey (ISWS) for the Illinois Environmental Protection Agency (IEPA). The study is part of the Nationwide Urban Runoff Program (NURP) sponsored by the U.S. Environmental Protection Agency. This report covers the first phase of the project, lasting through July 1980. The project will be completed in March 1982.

Four small urban drainage basins with separate sewers were selected in Champaign, Illinois. An automatic data collection system was installed and five sites were instrumented for runoff event monitoring and sampling. Event monitoring included recording of precipitation and runoff and sampling of runoff and atmospheric fallout. In 26 events, 947 samples were collected for 8,756 analyses. A street dirt sampling program designed to measure the total loads of material on the basins began in May 1980 and will continue through the project. Street dirt samples were collected for calculation of basin load before and after runoff events; determination of deposition, accumulation, and removal rates; and investigation of the particle size distribution and associated quality. A municipal street sweeping program was conducted on two of the four study areas at the end of Phase I. Analysis of the effect of municipal sweeping on runoff quality will be determined by statistical procedures and the simulation model Q-ILLUDAS.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: OPTIMIZATION OF CURRENT STREETSWEEPING PROGRAM (TASK IV D)

OUTPUT TITLE: Street Sweeping in Illinois: The Basics

ABSTRACT: Street debris commonly contributes a significant portion of the water pollution in urban stormwater runoff. Many water pollution solutions stress costly engineering projects which are not economically feasible for most towns. An alternative approach is reduction of urban runoff pollutants by improving street sweeping efficiency. This approach emphasizes the link between the level and efficiency of public service operations, such as street cleaning, and the quality or urban runoff.

The purpose of this publication is to demonstrate that water quality goals can be considered with the traditional goals of street sweeping: public relations, aesthetics, and traffic safety. Efficient routing, maintenance plans, equipment selection, personnel training, and assessments of local conditions will increase the amount of material removed from the street and decrease water pollution loadings without increasing expenses. In fact, increased program efficiency can even decrease expenses while maintaining the same if not higher levels of performance. This booklet presents information to help municipalities improve their street sweeping programs.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: OPTIMIZATION OF CURRENT STREETSWEEPING PROGRAM (TASK IV D)

OUTPUT TITLE: Street Sweeper Operator Training Course

ABSTRACT: The goal of this course was to increase the amount of material removed during streetsweeping operations. Operators who completed the course are able to select the appropriate machine adjustments, travel speeds, gears and methods to effectively remove the various types of debris found on streets. Five Streetsweeper Operator Training Courses were conducted in Decatur, Fairview Heights, Palatine, Rockford and Moline during May and June 1981. Two hundred and twenty people from ninety-three organizations attended the classes. The response to the class was positive and IDOT has decided to incorporate the class into their Local Roads and Streets Training Courses.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: NATIONWIDE URBAN RUNOFF PROGRAM - PILOT TO PROJECT TO DEMONSTRATE EFFECTIVENESS OF STREET SWEEPING PROGRAM - PHASE II

OUTPUT TITLE: Second Annual Report - Nationwide Urban Runoff Project, Champaign, Illinois - Evaluation of the Effectiveness of Municipal Street Sweeping in the Control of Urban Storm Runoff Pollution (August 1981).

ABSTRACT: Since June 1979 a study to determine the effects of municipal street sweeping on urban storm runoff quality has been conducted by the Illinois State Water Survey (ISWS) for the Illinois Environmental Protection Agency (IEPA). The study is part of the Nationwide Urban Runoff Program (NURP) sponsored by the U.S. Environmental Protection Agency. This report covers activities of the second phase of the project, August 1980 to July 1981, including analysis of the data from the 1980 sampling season.

Two pairs of small urban drainage basins were selected in Champaign, Illinois in 1979 and were instrumented for rainfall and runoff measurement and sampling. A sampling program for street dirt load, particle size distribution, and concentration of contaminants was also implemented. From November 1979 through July 1981, 83 events were sampled and 1663 samples analyzed for a total of 17,836 constituent determinations. During the first part of that period, no street sweeping was done in any of the basins; later, municipal sweeping was performed regularly in one of each pair (experimental basins). The effect of street sweeping on runoff quality is being determined by comparisons of runoff quality from swept and unswept basins, from experimental basins before and after the sweeping program was instituted, and from actual and simulated conditions on the basins. The last comparison involves extensive use of the Q-ILLUDAS simulation model.

The results presented in this report include a summary of the runoff quality data collected in 1980; summary and analysis of contribution by atmospheric deposition; summary of the street dirt load, particle size distribution, and quality data available; and analysis of the data for deposition and accumulation rates by basin. Also present are an assessment of performance of the municipal street sweeper; a summary of experimental efforts made to evaluate data collection methods; and presentation and discussion of the effect of sweeping on runoff quality from residential basins based on 1980 data.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: 208 Special Project NURP 1979

PROJECT TITLE: DEVELOPMENT OF STATEWIDE OUT OF STREAM CONSTRUCTION ACTIVITY CONTROL PROGRAM (80-58)

OUTPUT TITLE: Development of a Statewide Construction Erosion Control Program

The report contains a general overview of the construction site erosion problem in Illinois. The extent of the problem in Illinois and associated water quality issues are discussed. A synopsis of erosion control programs at a state level is given. A problem assessment of the programs and policies at the Illinois Environmental Protection Agency, Illinois Department of Conservation, Institute of Natural Resources and Capitol Development Board was completed. The legal framework for an IEPA sponsored erosion and sediment program was suggested and a strategy for an agency and statewide construction program was proposed.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'80

PROJECT TITLE: INTEGRATED CONSTRUCTION ACTIVITY CONTROL PROGRAM (81-70)

OUTPUT TITLE: Anticipated Completion Date - December 1982

ABSTRACT: This project will examine the options for the Construction Site Erosion Control Program outlined in the FY 1980 project and detail the requirements of such a program. This program will emphasize state funded projects, federally funded projects with State oversight and the use of regulatory permit authorities.

A thorough review of IEPA's program authority will be conducted. Upon its completion a model program will be established. Once successfully in place, an attempt will be made to work with other state agencies to adopt similar programs.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'81

PROJECT TITLE: NATIONAL URBAN RUNOFF PROJECT

OUTPUT TITLE: Anticipated Complete Date - March 1983

ABSTRACT: This phase of the project will evaluate the effect of urban runoff on the quality of the receiving stream.

A comprehensive data collection program will be used to establish the quantity and quality of dry weather and wet weather flow for a small agricultural basin upstream from and downstream from a significant urban contribution. The impact of the urban contribution on measurable water quality parameters will be the difference between these upstream and downstream observations. Loading of the stream from the urban portion of the watershed will be measured as part of the data collection program and simulated using the Q-ILLUDAS model. The effect of municipal street sweeping upon the quality of urban runoff and the impact of that runoff on the receiving stream will be demonstrated by simulating the reduction in loading from the urban area as a result of various intensities of municipal sweeping.

Existing conditions in the stream, upstream and downstream from the urban contribution will also be documented. In addition to the actual measured water quality parameters, these conditions will include: the diversity of micro-organisms and fish, the sediment oxygen demand of the stream bed, the biological and chemical composition of the stream bed, public use and perception of the stream, mathematical relationships between various stream dimensions known as stream geometry, bank stability and condition, and vegetative cover of the banks.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part B

Urban Stormwater/Construction Erosion Management

Projects of the Northeastern Illinois Planning Commission

PROJECT TITLE: INITIAL 208 PLANNING GRANT

OUTPUT TITLE: Staff Paper No. 28, Preventive and Corrective Measures: Urban Stormwater Pollution (December, 1977)

ABSTRACT: This report presented options available for upgrading the quality of urban stormwater discharges. Both preventive and corrective measures are included.

Information necessary to identify and quantify urban nonpoint discharge sources and their runoff characteristics was presented in Chapter I.

Chapter II contains information on the control of nonpoint pollution. Both preventive measures, such as control of sources and quantities of pollutants, and corrective measures, such as control in or at the end of collection systems, are presented.

Chapter III contains construction and operating costs of the various control methods for use in estimating the cost of site specific, corrective measures.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: Initial 208 Planning Grant

PROJECT TITLE: NATIONWIDE URBAN RUNOFF PROGRAM

OUTPUT TITLE: A Proposal to Evaluate the Water Quality Effects of Detention Storage and Source Control - First Year Report (April 2, 1979 to March 31, 1980)

ABSTRACT: This report contains data collected during the first project year and provides the foundation upon which further sampling and analysis of pollutant sources and detention basin performance in the Lake Ellyn watershed will be built. The following recommendations are made to improve and augment the current data collection network:

1. Current traffic counts should be conducted by the GEPWD to verify and augment the data.

2. A fish and wildlife survey needs to be conducted at Lake Ellyn. The lake has a significant fish population which should be characterized and quantified. The lake also is a stopping place for a large number of ducks and geese during migratory seasons. Whether bird droppings should be considered a pollutant source must be verified.

3. The types of vegetation in the Lake Ellyn watershed should be inventoried. Analysis of leaf composition also needs to be completed.

4. Analyses of soil composition needs to be completed. An analysis of soil leachate would be very useful as well to estimate shallow groundwater pollutant contributions to Lake Ellyn.

5. The efficiency of the street sweeping equipment employed by Glen Ellyn needs to be examined. The characteristics of street sweepings also must be quantified to formulate mass balances for the various constituents.

6. The small number of concrete streets and poor condition asphalt streets does not warrant further study in the Lake Ellyn watershed. Only asphalt streets in good or fair condition should be considered.

7. Sediment deposition rates to Lake Ellyn should be measured. The thickness, areal distribution, and vertical particle size distribution of deposited sediments also should be quantified and mapped to estimate detention basin performance.

8. Snow and road dirt sampling should be collected from more locations in each classification during a sample collection effort. It is felt that composite samples representing more points in each classification would be better than data from individual points. The distribution of constituents in terms of particle sizes also should be determined for road dirt samples.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: 208 Special Project NURP FFY '78

PROJECT TITLE: VALUE ENGINEERING (URPP 1018) (TASK 18)

OUTPUT TITLE: Optimization of Street Sweeping Plans in the DuPage River Basin

ABSTRACT: As part of the 208 Regional Water Quality Management Plan NIPC recommended alternative practices to achieve a 25 percent reduction of biochemical oxygen demanding pollutants (BOD) from existing impervious surfaces and a 50 percent reduction from future impervious surfaces. This project examines street sweeping as one means of achieving these reductions.

Various street sweeping strategies were initially simulated on a sample one square mile impervious area. Vacuum sweepers were found more cost efficient than brush sweepers, regardless of the sweeping strategy employed. Cost efficiency is defined in terms of cost per pound of BOD prevented from reaching a stream. The minimum cost strategy depended upon the level of pollutant reduction to be achieved; the higher the level of reduction, the greater the minimum cost. Imposing a requirement for at least a 25 percent reduction in pollutant washoff, the "optimum" sweeping strategy is one that sweeps one-fifth of the total surface five days a week. When runoff events greater than 0.01 inches per day occur, no sweeping is done on the six days following the rain. This strategy practiced from March through November, will reduce washoff from the area swept by 26.7% at a unit cost of $2.97 per pound of BOD removed.

The instream impact of the "optimum" strategy was then tested against the prototype in the NIPC plan and against current practices. The test basins for the study were the East and West Branches of the DuPage River. The situation simulated was that assumed for the year 2000 under the DuPage Basin alternative 1 in the NIPC 208 study. The re-calibrated model representation for the DuPage Basin was used for this simulation. Simulations were performed for water year 1972.

Simulation of both the "optimum" strategy and the NIPC prototype indicated that the minimum dissolved oxygen values would be higher than those achieved by current practices. The primary benefits of both plans were in the upstream reaches of the basins. Little impact was discernable at the downstream ends where neither plan affected average dissolved oxygen concentrations. The instream impacts of the two plans were essentially the same in the reaches examined. However, the unit cost of the NIPC prototype was twice that of the "optimum" plan. Furthermore, the total cost of the NIPC prototype was 260 percent that of the "optimum" plan. Implementing the "optimum" plan in place of the original NIPC prototype would save $1.3 million on the East and West Branches of the DuPage River for the year studied.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: MODEL ORDINANCE FOR STORMWATER DETENTION. (URPP 1005.01) (TASK 6 A)

OUTPUT TITLE: Suggested On-site Stormwater Detention Basin (Printed and Distributed Under URPP 1005.01)

ABSTRACT: This ordinance has been prepared as a model to assist local units of government in developing their own regulations. Background information on stormwater drainage has been included to provide a perspective for the officials who may be called upon to interpret the basic requirements. Topics addressed include: impact of stormwater on water quality, legal aspects of stormwater runoff, subdivision drainage plans, design policies, release rates from detention basins, siting stormwater detention basins, design procedures, maintenance and limiting factors for detention basins.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track and '78 Fast Track

PROJECT TITLE: MODEL ORDINANCES FOR SOIL EROSION AND SEDIMENTATION CONTROL AND SURFACE RUNOFF (1005) (TASK 6 A)

OUTPUT TITLE: 2) Suggested Soil Erosion and Sedimentation Control Ordinance (January 1980) (Printed and Distributed Under URPP 1005.02)

ABSTRACT: Sediment was identified as a major water pollution problem in the initial areawide WQM plan. The suggested Soil Erosion and Sedimentation Control Ordinances address one aspect of the problem: erosion and sediment from areas undergoing urbanization. Three model ordinances have been prepared. The first is free standing. It provides for the issuance of a site development permit based on development and erosion control plans. The second model ordinance is intended to be incorporated into an existing subdivision ordinance. The third was developed as an addition to the local building code.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track and '78 Fast Track

PROJECT TITLE: DESIGN REGIONAL STORMWATER CONTROL (URPP 1021.01) (TASK 21)

OUTPUT TITLE: Pollutant Removal Effectiveness of the Detention of Urban Runoff - A Proposal to USEPA (April 1980)

ABSTRACT: The product of this project is a proposal for evaluating the benefits of non-point source pollution controls by large scale urban detention facilities. Under NIPC's general supervision, the proposal was prepared by the Metropolitan Sanitary District of Greater Chicago.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: ORDINANCE - RELATED TECHNICAL ASSISTANCE TO IMPLEMENTING AGENCIES (URPP 1005.06) (TASK 1)

OUTPUT TITLE: Memorandum - Report on Activities Under NIPC Project No. 1005.06 and Status of Ordinance Adoptions

ABSTRACT: This report summarizes on a county basis the number of NIPC regions which have stormwater detention regulations and erosion and sedimentation ordinances in place. Of 260 municipalities in the region (excluding Chicago) 204 (78.5%) have their own stormwater detention regulations and/or are covered by regulations of the MSDGC and 85 (32.7%) presently have erosion and sedimentation ordinances. The report targets Kane and McHenry County as the areas which should be prioritized for detention ordinances and erosion control ordinances. Two other areas for concentrated effort on erosion and sedimentation ordinances are the Lower DesPlaines River Watershed in Western Cook and Eastern DuPage Counties and the Little Calumet Watershed in South Cook County. Education on detention basin maintenance and documents detailing technical assistance are also included in the report.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: GUIDELINES AND STANDARDS ON URBAN STORMWATER FOR COUNTYWIDE WATER QUALITY COMMITTEES (URPP 1001.03) (TASK 4)

OUTPUT TITLE: Municipal Programs to Reduce Water Pollution from Urban Stormwater Runoff: Guidelines for Local Implementation

ABSTRACT: This report includes recommended Guidelines for County Water Quality Committees and recommended activities for municipalities and counties. The first section contains a review of urban stormwater pollution problems and a summary of NIPC's recommended urban stormwater control program for the six county planning area. Description of projects completed and other developments since the adoption of the recommended Urban Stormwater Program are also included. In addition, the first section contains a suggested Agenda for County Water Quality Committees.

The second section summarizes actions local governments can take to reduce water pollution from stormwater runoff. Several stormwater management/practices are listed. The subsection potential for reducing stormwater pollution in your community discusses developing versus already developed areas. Characteristics of drainage systems, density of urbanization, major sources of stormwater runoff and inventory of current practices are discussed. Two additional subsections discuss selecting urban stormwater management practices for the reader's community and implementing a stormwater management program.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: NATIONWIDE URBAN RUNOFF PROGRAM

OUTPUT TITLE: An Evaluation of the Water Quality Effects of Detention Storage and Source Control - Second Project Year Report (April 1, 1980 to March 31, 1981)

ABSTRACT: This report contains data from the second year of the NURP project which is investigating the efficiency of Lake Ellyn, a wet bottom detention facility, in removing pollutants from storm water runoff.

The data presented in this report is preliminary and subject to revision. The data is presented in order to give the reader a general idea of the relative constituent concentrations and loads from various sources.

The second year work tasks were atmospheric deposition sampling; source surveys; control point sampling; runoff water quality monitoring; detention basin bottom material sampling; and detention basin water column sampling.

Specific objectives of the study are:

1. Identify the originating sources of sediment, BOD, ammonia, nutrients, and metals and construct their respective material balances.
2. Quantify and qualify the effects of urban stormwater detention on water quality and, where possible, on bottom materials in the detention basin.
3. Identify the design factors necessary for siting, sizing, and operating storage facilities, based on the analysis of runoff variables such as magnitude and duration, pollutant settling characteristics and reoccurrence of flow and pollutant loads.
4. Evaluate the relative importance of wet and dry periods and seasonal variation in terms of pollutant load movement, bottom material characteristics and water quality.
5. Investigate the lag effect in the movement of sediments through the drainage system by determining the time delay between the input of the constituent to the drainage pathways and its output to Lake Ellyn.
6. Identify the measurable physical and anthropogenic characteristics of the watershed and attempt to relate these to urban runoff quantity and quality to determine whether these characteristics are sufficient to define water quality problems and design solutions.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: 208 Special Project NURP 79

PROJECT TITLE: TARGETED ESTABLISHMENT OF STORMWATER REGULATORY PROGRAMS (URPP)

OUTPUT TITLE: Anticipated Completion Date - June 30, 1982

ABSTRACT: A central recommendation of the Areawide Water Quality Management Plan for northeastern Illinois is that municipalities and counties in the region adopt a series of local ordinances which would reduce urban stormwater tention, and erosion and sedimentation control, with additional consideration being given to water conservation and performance zoning. Under previous projects in the continuing planning program, the Commission prepared models of these ordinances, distributed them widely to local governments, and provided technical assistance and general encouragement for their adoption. The current project is intended to carry that effort forward by targeting technical assistance in ordinance adoption and enforcement to key portions of the region. The areas to be targeted have been selected on the basis of various factors. Greatest attention is being given to areas where (1) stormwater runoff is a significant contributor to water pollution; (2) potential for new development is high; and (3) the percentage of commodities having adopted one or more of these ordinances is relatively low.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY'80

208 PLANNING IN ILLINOIS

Part B

Urban Stormwater/Construction Erosion Management

Projects of the Southwestern Illinois Metropolitan
and Regional Planning Commission

PROJECT TITLE: DEVELOPMENT OF MODEL ORDINANCE AND STANDARDS AND SPECIFICATIONS FOR DEVELOPING AREAS (TASK 3)

OUTPUT TITLE: Model Soil Erosion and Sedimentation Control Ordinance (October 1978)

ABSTRACT: Erosion and sediment rates associated with construction, which exceed 200 tons per acre per year at some sites, are often much higher than those associated with agricultural activities. Construction site erosion also differs in that problems generally cease with project completion and site stabilization. Thus control during the actual construction is the objective.

This report contains: (1) methodologies utilized in the development of the ordinance, (2) the ordinance as developed and ways of implementation and (3) the impact of public involvement throughout the project.

The model erosion and sediment control ordinance applies to utility construction, land development (commercial, residential, industrial, etc.) and all non-federally funded highway construction. Since there is currently no government authority to enforce controls on construction site erosion, if the Areawide Management Coordinating Board approves the model ordinance it would serve to establish erosion control uniformity throughout the 208 area.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '77 Supplemental

PROJECT TITLE: URBAN STORMWATER TESTING PROGRAM (TASK 4)

OUTPUT TITLE: Urban Stormwater Testing Program (Report SWIL-MAPC 80-04, January 1980)

ABSTRACT: This report documents the results of the first two phases of the Urban Stormwater Testing Program. The main purpose of the three-phased program is to identify and develop alternative control and implementation plans based on the nature and extent of local urban runoff problems. Phase II activities included collecting water quality samples in two urban watersheds, laboratory analysis of the samples, and collecting pertinent hydrologic data as input to the QUAL-ILLUDAS Model.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: DESIGN OF STORMWATER RUNOFF CONTROL MEASURES (TASK 6)

OUTPUT TITLE: Water Quality Implications of Hydrologic Modifications (Report SWIL-MAPC 79-18, October 1979)

ABSTRACT: Numerous structural and non-structural solutions were developed to address the drainage problems identified in the major drainage basins of the Southwestern Illinois Metropolitan and Regional Planning Commission 208 study area. Alternative solutions were analyzed for their economic and functional efficiency for solving drainage and flooding problems. Fifteen structural measures or hydrologic modifications were recommended within the 208 planning area. This report documents the potential short and long term impact on surface water and groundwater quality of the major alternative solutions.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: DETAIL STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION SITE EROSION CONTROL (TASK 3)

OUTPUT TITLE: Standards and Specifications for Erosion and Sedimentation Control in Developing Areas Report SWIL-MAPC 80-10, (April 1980, Revised July 1981)

ABSTRACT: This manual is designed to compliment the Model Erosion and Sedimentation Control Ordinance (SIMAPC, 1978). It presents technical data relevant to the design of structural and vegetative erosion control practices in Southwestern Illinois. The report presents a range of measures for mitigating construction erosion in accordance with the ordinance requirements. Thus, it can assist developers in selecting the correct combination of approaches for a specific site, and aid reviewing authorities in determining the adequacy of the chosen controls. The necessity of a coherent plan for preventing soil loss both during and after construction is emphasized, and a step-by-step planning procedure is detailed. Lengthy discussions of the various practices are included, as well as sample calculations for runoff velocities and an examination of the Universal Soil Loss Equation. Methods examined include on-site erosion, sediment, and stormwater management control structures as well as soil stabilization practices useful for achieving control of sediment, stormwater runoff, and other pollutants resulting from development activities. Previous work by the Soil Conservation Service in many states concerning erosion and sedimentation was very useful in compiling this manual.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: CONSTRUCTION SITE EROSION CONTROL DEMONSTRATION PROJECT (TASK 6)

OUTPUT TITLE: Construction Site Erosion Control Demonstration Project (Report SWIL-MAPC 80-33, December 1980)

ABSTRACT: Construction site erosion was recognized as an important source of sediment in the SIMAPC Water Quality Management Plan. A model ordinance for the control of such erosion was published in 1978. Standards and Specifications for Erosion and Sedimentation Control in Developing Areas was published in 1980 to provide a technical basis for measuring compliance with ordinance. During 1980, using the expertise developed during this earlier work, SIMAPC convinced Cottonwood Companies, Inc. to prepare and implement an erosion and sediment control plan for its 19.51 acre shopping center development in Glen Carbon.

The following practices were incorporated: (1) infiltration areas, (2) preservation of existing plants, (3) diversions and retention walls to stablize critical slopes, (4) parking lot detention, and (5) sediment basin. A 4' by 8' sign was posted at the site, with a sketch map of the site pointing out the erosion control practices. the sketch erosion control plan was made available to the public through SIMAPC, and the project was well-publicized in local newspapers.

It was found that incorporation of control measures into the construction program is much less costly than after the fact mitigation.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: ADAPTION OF NIPC MODEL URBAN STORMWATER RUNOFF CONTROL ORDINANCE (TASK #3)

OUTPUT TITLE: Model Stormwater Detention Ordinance for Developing Areas (Report SWIL-MAPC 82-03, January 1982)

ABSTRACT: This report presents a Model Ordinance which can be adapted by counties and municipalities as a means of mitigating stormwater problems caused by increased urbanization. Pertinent background information on the stormwater impact on water quality, legal implications of stormwater pollution, local governments, authority to regulate, and hydraulics and stormwater runoff are discussed. Siting, performance standards and detention basins are also discussed. A commentary on these sections of the model ordinance which may be particularly controversial or may need interpretations is included.

PLANNING AGENCY: SIMPAC
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part C

Hydrologic Modifications

208 PLANNING IN ILLINOIS

Part C

Hydrologic Modifications

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: WATER QUALITY IMPACTS OF RIVER TRANSPORTATION (TASK IV A)

OUTPUT TITLE: Effects of Barge Passage on the Water Quality of the Kaskaskia River (December 1980)

ABSTRACT: This two phase report summarizes studies which identify water quality impacts on the Kaskaskia River due to barge navigation. Phase One included a thorough review of the data available for water quality, fisheries, and other aquatic life in the navigation reach of the Kaskaskia. Phase Two of the project included field evaluations of the effect of barge passage on several key water quality parameters. Observations of temperature, dissolved oxygen, total, dissolved, and suspended solids, transparency and pH were made before and after barge passage. Samples were collected at various depths and included sampling for several time periods following barge passage.

Spills and barge passage turbulence cause the major effects on water quality associated with barge traffic. These include disturbances of the water column, scouring of bottom materials, and resuspension or maintenance of high levels of suspended solids.

The turbulence associated with barge passage is caused by two primary mechanisms: 1) displacement of water as the tow passes; and 2) prop wash from the barge tow (towboat). The water displacement effects are primarily associated with moving barges. The effect of the prop wash is dependent on the tow speed, the speed of the propeller, and the diameter of the propeller. When stationary the prop wash spreads downward eroding a scour hole. Moving tows have decreased scour effects but resuspension of sediments from the river bed is possible. Prop wash is of greater significance when the tow is stationary. As the tow accelerates the effect of prop wash in relation to displacement turbulence diminishes. The magnitude of the water quality impact due to turbulence is related to the nature of the sediment and the potential for suspension which is further related to water column turbidity, and primary production.

In addition to resuspension of bottom materials, turbulence can also significantly effect the chemistry and quality of the water column by the release of soluble materials associated with bottom sediments and modification of dissolved oxygen levels. In some systems, barge induced turbulence will disrupt thermal stratification which may have effects on rates of chemical reactions and water column mixing.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: **DEVELOPMENT OF AN INTEGRATED STATE-FEDERAL CONTROL PROGRAM FOR HYDROLOGIC MODIFICATION (80-59)**

OUTPUT TITLE: Protecting Illinois Waters: Joint Dredge and Fill Permit Application Form (July 1981)

ABSTRACT: The purpose of this project was to review and coordinate the activities of state and federal agencies concerning hydrologic modifications to meet the goals of the Clan Water Act. Products include documents on administrative procedures for 401 certification, interagency agreement on public notice, state-federal agreements and interagency agreements. Resulting regulatory changes concerning joint state-federal application procedures for discharge permits are published in the Illinois Register, U.S. Issue 31, pages 7891 through 7902.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'80

PROJECT TITLE: COMPARATIVE EVALUATION OF NATURAL AND MODIFIED CHANNEL CHARACTERISTICS TO ESTABLISH WATER QUALITY USE ATTAINMENT (81-66)

OUTPUT TITLE: Anticipated Completion Date - June 1983

ABSTRACT: The project will utilize the prior 208 studies on intermittent streams and various intensive stream surveys. These studies will be augmented by site specific studies of various stream systems to define the absolute potential of both altered rural and urban stream segments relative to unaltered segments. The protocol and findings of these efforts will result in formulation and implementation of proposed stream alteration policy.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part C

Hydrologic Modifications

Projects of the Northeastern Illinois Planning Commission

PROJECT TITLE: HYDROLOGIC MODIFICATION UPPER DESPLAINES RIVER (URPP 1022)

OUTPUT TITLE: Hydraulic Modification: Upper DesPlaines River.

ABSTRACT: The study described and analyzed the effects of five dams on the water quality of the Upper DesPlaines River. A simulation study was completed and it was concluded that dissolved oxygen conditions could be improved by removing 3 of the 5 low-head dams having significant back water pools and associated water quality problems. Other management strategies suggested were: 1) that log and debris jams be removed and routine channel maintenance established, 2) that artificial flood plain berms be removed or modified to allow flood flows unrestricted access to the flood plain, 3) that certain flood plain gravel pits be connected to the river to provide both flood and low flow augmentation and 4) that the rivers flow regime be returned to a more natural start by the creation of artificial riffles and braids.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part D

Residual Wastes

208 PLANNING IN ILLINOIS

Part D

Residual Wastes

Projects of the Northeastern Illinois Planning Commission

PROJECT TITLE: PLAN FOR SEPTAGE DISPOSAL

OUTPUT TITLE: Dropped from Fast Track Work Program. NIPC applied for funds under FFY '78 Slow Track to do this same project.

ABSTRACT:

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: REGIONAL SLUDGE MANAGEMENT REPORT (URPP 1014)
(TASK 14)

OUTPUT TITLE: Staff Report #30 Regional Sludge Management

ABSTRACT: The report summarizes laws governing sludge management, characteristics of sludge, and the state of the art for management of municipal wastewater treatment sludge, water treatment sludge, industrial waste treatment slude and septage. The report also contains an inventory of existing sludge sources, quantities, management systems and disposal sites in Illinois. The final chapter outlines the future needs of Northwestern Illinois for sludge management facilities and describes the management systems considered most feasible from economic, technical and environmental standpoints.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: PREPARATION OF PLAN FOR SEPTAGE DISPOSAL
(URPP 1006) (TASK 7)

OUTPUT TITLE: Septage Disposal Plan First Draft

ABSTRACT: This is a draft of the policy plan, which defines the supervisory role of government in septage disposal.

A final report Residuals Septage Disposal Plan was completed under URPP 1006.01 in May 1981.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: RESIDUALS DISPOSAL PLAN (URPP 1006.01) (TASK 3)

OUTPUT TITLE: Residuals Disposal Inventory

ABSTRACT: The report recommends a disposal plan for wastes generated by septic tank-soil absorption field systems in Northwestern Illinois. This report: defines present and future problems and needs associated with septage disposal systems; examines current legislation and regulations pertaining to septage disposal; reviews current studies; suggests institutional arrangements for management, financing, and other aspects of the septage disposal plan implementation; presents various septage disposal methods; develops criteria for a septage disposal plan and contains a summary status of the residuals management outlook in each county.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: PREPARATION OF PLAN FOR SEPTAGE DISPOSAL
(URPP #1006.01)

OUTPUT TITLE: Septage Disposal Plan

ABSTRACT: The report recommends a strategy for managing septage in the six county region. Application to agricultural land was the preferred disposal method presented in the plan with discharge to treatment plants or placement in approved sanitary landfills as backup alternatives during unsuitable weather. The Plan places principal responsibilities for septage management on county code departments (usually health), favors county registration of septage pumpers, and encourages increased treatment of sludge at wastewater treatment facilities.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part D

Residual Wastes

Projects of the Southwestern Illinois Metropolitan
and Regional Planning Commission

PROJECT TITLE: AREAWIDE SLUDGE RESOURCE MANAGEMENT PROGRAM (TASK 9)

OUTPUT TITLE: Areawide Sludge Resource Management Program: Phase I (Report SWIL-MAPC 81-03, January 1981)

ABSTRACT: This report presents a plan for maximum utilization of sludge from area Publically Owned Treatment Works (POTWs) as a fertilizer and soil amendment. A rationale for proposing this mode of sludge utilization is provided, as well as an impact assessment, design criteria, and information dissemination sub-plan. Applicable Federal and State regulations are discussed. It is hoped that this document will stimulate increased application of sludge to agricultural land, with a corresponding decrease in the amount of sludge landfilled.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: SLUDGE RESOURCE MANAGEMENT PROGRAM PHASE II (TASK #2)

OUTPUT TITLE: Completion Date - September 30, 1982

ABSTRACT: This program attempts to maximize recycling of domestic wastewater sludge for agricultural and reclamation purposes. Phase II is essentially a "marketing" operation, aimed both at creating a demand for sludge among the agricultural community and convincing municipal decision-makers of the economic and environmental propriety of land application. An analysis of the suitability of some area facilities in this program is also being completed.

PLANNING AGENCY: SIMPAC
FEDERAL FUNDING CYCLE: FFY'80

208 PLANNING IN ILLINOIS

Part E

Oil Field Brine

208 PLANNING IN ILLINOIS

Part E

Oil Field Brine

Projects of the Greater Egypt Regional Planning
and Development Commission

PROJECT TITLE: OIL FIELD BRINE SURFACE DAMAGE EROSION ASSESSMENT

OUTPUT TITLE: Oil Field Brine: A Survey of Land Damage in Hamilton County (December 1980)

ABSTRACT: The report's purpose is to verify the potential for sources of major sediment and chemical contaminants related to oil production. This report estimates the acreage of land damaged by oil field brine in Hamilton County, Illinois and estimates the soil loss from these land areas. The probability of soil entering surface water was estimated by the proximity of the damaged area to a stream.

PLANNING AGENCY: GERP & DC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: OIL FIELD BRINE SURFACE DAMAGE PHASE II

OUTPUT TITLE: Planning the Management of Oil Field Brine Damaged Soil.
Anticipated Completion Date - July 1982

ABSTRACT: This report was written to provide information to Soil and Water Conservation Districts, farm land owners and other agricultural interests. Methods used to conduct the county wide brine damage surveys were reviewed and results from surveys in Jefferson and Franklin Counties included. State rules and regulations and complaint procedures were discussed and the damage complaint process explained. Reclamation strategies for damaged sites was outlined beginning with the development of survey data to implementation of reclamation procedures. The report included a method for the classification and prioritization of damaged sites for maximum benefit with limited cost share or other financial resources. A public education program was developed and the role of agricultural agencies and landowner associations discussed. Funding of reclamation via ASCS cost share and execution of drilling contracts providing payment to landowners are discussed.

PLANNING AGENCY: GERP & DC
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part E

Oil Field Brine

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: ASSESS PROBLEMS RELATED TO OIL FIELD BRINE DISPOSAL (TASK VII B)

OUTPUT TITLE: Illinois Oil Field Brine Disposal Assessment (November 1978)

ABSTRACT: The report summarizes oil production history in Illinois, the environmental problems associated with oil field brine disposal practices, field studies at specific sites having brine pollution problems, and the efficacy of the rules and regulations governing oil field brine disposal in Illinois. Groundwater pollution from brine was more extensive than anticipated and the contaminated groundwater impacted streams through seepage. This often raised chloride levels on streams above the allowable general use standard. There was a good correlation between electrical earth resistivity measurements and groundwater chloride concentrations which makes this a valid method to determine the extent of groundwater pollution at a given site.

It was recommended that IEPA continue resistivity testing to determine the extent of groundwater pollution from brine, the Illinois Department of Mines and Minerals should accelerate their program to eliminate unlined brine pits, injection wells should be constructed with an annulus which can be pressure monitored and that the Illinois EPA should complete a legal assessment of the regulatory programs related to oil field brine disposal.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '77 Initial 208 Grant

PROJECT TITLE: CONCLUSION OF THE OIL FIELD BRINE DISPOSAL STUDY (TASK VII B)

OUTPUT TITLE: Illinois Oil Field Brine Disposal Assessment -- Phase II (January 1981)

ABSTRACT: This report reviews and updates the recommendations of the Water Quality Management Plan, summarizes studies which have investigated the brine problems, examines the legislation and programs which regulate brine disposal and reports on the progress made to resolve the brine contamination problem.

A discussion of the geologic origin of oil brine and a brief history of oil production in Illinois is presented in an Appendix.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

208 PLANNING IN ILLINOIS

Part F

Point Sources and On-site Systems

208 PLANNING IN ILLINOIS

Part F

Point Sources and On-site Systems

Projects of the Greater Egypt Regional Planning and Development Commission

PROJECT TITLE: FACILITY PLANNING (TASK IV)

OUTPUT TITLE: Facilities Planning for Small Communities (January 1980)

ABSTRACT: This report describes ten unsewered communities in the Southern Illinois 208 area and the factors used in their facilities planning decisions. Cost information and other examples are included to aid small communities in their decision making process. A model innovative sewage system based upon the needs of an active southern Illinois community is included.

PLANNING AGENCY: GERP & DC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: 201/208 CONSISTENCY REVIEW

OUTPUT TITLE: No Final Report Document Required

ABSTRACT: This element is an on going process designed to facilitate the process of facility planning, design and construction in the ten-county Southern Illinois area.

Activities include: 1) Review and evaluation of facility plans; 2) Monitoring and reporting progress of designated management agencies in the construction grants process; and 3) Meeting with designated management agencies to discuss problems and assist in grant related tasks and application preparation.

PLANNING AGENCY: GERP & DC
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part F

Point Sources and On-site Systems

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: EVALUATION OF THE MANAGEMENT MECHANISMS FOR ON-SITE WASTEWATER DISPOSAL (TASK V A)

OUTPUT TITLE: Evaluation of the Management Mechanisms for On-site Wastewater Disposal: On-site Wastewater Disposal Zones (October 1980)

ABSTRACT: The report contains four major sections: 1) A review of H.B. 2928, an Act to provide for the creation of municipal wastewater disposal zones, to clarify what can and cannot be done under this legislation to establish wastewater disposal zones; 2) an assessment of other Illinois laws to determine whether they (Intergovernmental Cooperation Act etc.) allow local units of governments (municipalities, counties, and special districts) to establish individually or develop cooperatively wastewater disposal zones; 3) an outline of the minimum and maximum range of responsibilities that are needed to manage a wastewater disposal zone and still maintain construction grant eligibility; and 4) a model ordinance for the establishment of a wastewater disposal zone.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: DEVELOPMENT OF A STATEWIDE SEPTAGE MANAGEMENT AND DISPOSAL PROGRAM (81-69)

OUTPUT TITLE: Anticipated Completion Date - September 1983

ABSTRACT: This project will review previous 208 funded outputs from State and Areawide programs related to septage management. The project will emphasize the acquisition and interpretation of data related to septage generation, availability of pumper service, relative to demand, and accessibility to acceptable disposal sites (pumper operated, permitted landfill or wastewater treatment plant). Information for this interpretation will be derived from the Division of Water Pollution Control, Land Pollution Control, Illinois Department of Public Health and the most recent U.S. Census Bureau data available.

This project will also assess Agency procedures related to septage disposal within the Divisions of Water and Land Pollution Control. Following this review of current procedures and policies, recommendations will be made where appropriate to improve Agency performance in the area of septage management.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part F

Point Sources and On-site Systems

Projects of the Northeastern Illinois Planning Commission

PROJECT TITLE: ON-SITE WASTEWATER DISPOSAL SYSTEMS (URPP 1012)
(Task 12)

OUTPUT TITLE: Staff Paper No. 32, On-site Wastewater Disposal Systems

ABSTRACT: The report is a primer about on-site wastewater disposal systems. It includes a brief background on the number of such systems in the NIPC region. Most of the report discusses factors involved in septic and alternative system management, such as soils, depth to water table or bedrock, design and siting considerations, system maintenance and restoration practices, government regulations and current USEPA policy. There is also a section on alternative on-site disposal systems which describes how they work and where they operate best. The purpose of the paper was to provide background information to management agencies as they prepared strategies for on-site disposal as set forth in the initital 208 Plan.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: RECOMMENDATIONS RELATING TO THE EXTENSION OF SEWERS TO SERVICE PROBLEM SEPTIC AREAS

OUTPUT TITLE: Project dropped; deferred to FFY '79 work program

ABSTRACT:

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: RECOMMENDATIONS RELATING TO THE EXTENSION OF SEWER SERVICE TO NEW AREAS

OUTPUT TITLE: Project deferred

ABSTRACT:

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: COMPLETION AND REEXAMINATION OF 201 FACILITIES PLANS (1007) (TASK 7)

OUTPUT TITLE: No Formal Report

ABSTRACT: This project enabled NIPC staff to review and comment upon 201 facilities plans and related documents as submitted by local agencies. Included in this category were Step I plans of study, updated, revised, and newly-completed facility plans, sewer system evaluation surveys, and infiltration/inflow analyses.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: COMPLETION AND REEXAMINATION OF 201 FACILITIES PLANS (URPP 1007.01) (TASK 8)

OUTPUT TITLE: Quarterly Report, Jan.-Mar., 1980

ABSTRACT: This project funded review functions. Numerous municipal reviews were made including the following types of programs: sewer system evaluation surveys, updated and revised facility plans, proposed sewer evaluation surveys, Step I facility plans, and wastewater treatment construction proposals.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: RECOMMENDATIONS FOR EXTENSION OF SEWER SERVICE TO PROBLEM SEPTIC AREAS (URPP 1030.02) (TASK 10)

OUTPUT TITLE: Recommendations for Extension of Sewer Service to
Problem Septic Areas (November, 1981)

ABSTRACT: This project identified those residential areas of northeastern Illinois that have major problems with failing or prone-to-fail septic systems, and presented several strategies for alternative technical, jurisdictional, and financial solutions. Guidelines and criteria were developed for identifying problem septic disposal areas, for determining when alternatives to municipal-type service are not possible, and for determining when extension of service from an established treatment authority is feasible. Legal and institutional limitations on the ability of treatment authorities to extend service outside their corporate limits were identified and evaluated, and means of overcoming these limitations were recommended. Alternative mechanisms for financing the extension of service outside treatment authorities' corporate limits were also identified. A series of recommendations were proposed for consideraion as amendments to the 208 Plan.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: EVALUATION OF 201 FACILITY PLANS (UNPP 1007.02)

OUTPUT TITLE: Anticipated Completion Date - September 30, 1982

ABSTRACT: The NIPC 208 Plan will be updated under this project to include continuing planning project results and amendments which have occurred since its certification. Final products will include revised 208 plan text and individual facility planning area atlases. These atlases will show FPA boundaries, information on point sources, and population forecasts. Expected project completion date is September 30, 1982.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part F

Point Sources and On-site Systems

Projects of the Southwestern Illinois Metropolitan
and Regional Planning Commission

PROJECT TITLE: ON-SITE SEWAGE DISPOSAL REGULATIONS (TASK 2)

OUTPUT TITLE: Model Ordinance for On-site Sewage Disposal (September 1978)

ABSTRACT: While most counties and municipalities in the planning area have developed ordinances for control of on-site sewage disposal systems, review of these ordinances indicated that several deficiencies existed in the regulations and in administrative practices. To remedy the deficiencies, a Model Ordinance was produced which calls for consideration of factors not previously accounted for, such as soil conditions, systems inspections, prior to installation. The Model Ordinance basically retains the contents and format of the Illinois Private Sewage Disposal Act and Code, but adds to and/or expands upon those sections deemed most critical to alleviating identified problems in this region.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '77 Supplemental

PROJECT TITLE: PRETREATMENT COMPLIANCE PROGRAM INDUSTRIAL COST
RECOVERY AND USER CHARGE SYSTEM (TASKS 4, 5 and 6)

OUTPUT TITLE: Industrial Pretreatment Program (October 1978)

ABSTRACT: The initial industrial point source assessment indicated that the users of publicly owned treatment works (POTWs) generate the majority of the major industrial wastewater in the 3-county designated area. Regulation of these dischargers is generally limited to local sewer use ordinances that are general in nature and do not specify limits on concentrations of industrial pollutants. Most treatment authorities stress preventing upsets in their biological treatment systems by the introduction of sludge loads that are toxic to the biological process in the treatment. The fact that many industrial pollutants merely pass through the POTW and do not receive adequate treatment has not been considered. These pollutants may be in quantities and concentrations that are unacceptable under national or state industrial discharge standards.

This report contains: (1) the methodologies utilized in developing a model pretreatment program; (2) the impact of public participation throughout the planning process; (3) the model industrial compliance pretreatment program; and (4) the inventory of existing ordinances, programs, and practices in selected areawide POTWs.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '77 Supplemental

PROJECT TITLE: DEVELOPMENT OF PROCEDURAL GUIDELINES FOR THE FORMATION OF ON-SITE WASTE MANAGEMENT ZONES (TASK 5)

OUTPUT TITLE: Guidelines for Assistance: Alternative Sewage Treatment Systems, June 1979

ABSTRACT: The Innovative/Alternative (I/A) Technology Program created by the Clean Water Act of 1977 enables previously unsewered communities to qualify for 85 percent federal funding of I/A collection and treatment processes. Most of these processes are on-site systems or some variation thereof. This guidebook provides a step-by-step procedure which can be followed by small municipalities in order to receive I/A funding. The most crucial step is the formation of a Municipal Wastewater Disposal Zone, which provides the requisite management authority for operation, maintenance, and monitoring. Facilities planning requirements, future growth considerations, public participation requirements, and financial considerations are also detailed.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: FEASIBILITY STUDY OF ALTERNATIVE ON-SITE SYSTEMS (TASK 7)

OUTPUT TITLE: Feasibility Study of Alternative Wastewater Treatment Systems (Report SWIL-MAPC 79-19, October 1979)

ABSTRACT: Recent changes in wastewater construction grant regulations encourage the use of alternative approaches where centralized collection and treatment of sewage is not feasible. This study identifies the areas within the designated water quality management planning area which are suitable for participation in the new federally funded program. Factors such as population, soil conditions, topography and historical on-site system malfunctions and likelihood of future extensions were analyzed. A number of municipal and non municipal areas were identified in all three counties which could benefit from the provisions of the program as were system recommendations specific to the region.

The study found that the majority of the suitable areas are not within incorporated boundaries, but the legal mechanism to simplify establishment of wastewater management programs in Illinois is only effective in incorporated municipalities. The study recommends State legislation to assist non-municipal entities in establishment of wastewater management programs.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: FACILITY PLANNING ASSISTANCE AND COORDINATION (TASK 2)

OUTPUT TITLE: Facility Planning Assistance and Coordination
(December 1979)

ABSTRACT: The current status of facility planning in Madison, Monroe and St. Clair Counties is summarized in tabular form. The table includes 5 regional facilities planning areas and all other community facilities in the counties.

The name of the engineering consultant employed by each facility, the project status during SIMAPC's 1977 facilities plan update and its status in December 1979 are shown in the table. A "Remarks" column gives additional information about problems or issues yet to be resolved, A-95 reviews and other activities which require SIMAPC's attention.

The quarterly progress reports to USEPA from SIMAPC are referenced in the report.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: 208/201 CONSISTENCY REVIEW (TASK #5)

OUTPUT TITLE: Facility Planning Evaluation and Coordination (March 1982)

ABSTRACT: This project documents the procedures used to ensure that 201 facility planning activities are consistent with 208 water quality planning goals.

The Commission provided (1) facility planning assistance to the appropriate areawide designated management agencies (DMA's); (2) coordination between IEPA and local DMAs; and (3) AMCB review of facilities plans and FPA boundary change requests in terms of 201 construction grant requirements and WQM Plan recommendations. The status of facility planning within the SW Illinois designated area as of January 1982, and related activities in this continuing planning effort are documented in this report.

PLANNING AGENCY: SIMPAC
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part G

Implementation Oriented Projects

208 PLANNING IN ILLINOIS

Part G

Implementation Oriented Projects

Projects of the Greater Egypt Regional Planning and Development Commission

PROJECT TITLE: PUBLIC PARTICIPATION (TASK I)

OUTPUT TITLE: Public Participation Activities

ABSTRACT: The report documents the Public Participation efforts of the Greater Egypt Regional Planning and Development Commission in the continuing Water Quality Management planning process under Section 208 of the Federal Clean Water Act.

PLANNING AGENCY: GERP&DC
FEDERAL FUNDING CYCLE: 78 Fast Track

PROJECT TITLE: MANAGEMENT PLANNING (TASK II)

OUTPUT TITLE: Management Activities Report (January, 1980)

ABSTRACT: The report discusses management activities of the Greater Egypt Regional Planning and Development Commission in the continuing Water Quality Management planning process under Section 208 of the Federal Clean Water Act. This includes the organization of the Regional Water Quality Coordinating Council, work with local government management agencies and relationships with other agencies.

PLANNING AGENCY: GERP&DC
FEDERAL FUNDING CYCLE: 78 Fast Track

PROJECT TITLE: PUBLIC PARTICIPATION IN WATER QUALITY ISSUES
(TASK I)

OUTPUT TITLE: Public Participation -- 1980

ABSTRACT: This report documents water quality management planning public participation activities in Franklin, Gallatin, Hamilton, Hardin, Jackson, Jefferson, Perry, Saline, and Williamson Counties, Illinois. Public participation efforts of the Greater Egypt Regional Planning and Development Commission during the 1980 project year are documented. Included are activities of the Regional Water Quality Coordinating Council and its supporting committees plus various activities related to the 1980 project work program. The reported activities were carried out as part of the continuing planning process to fulfill public input goals of the Areawide Waste Treatment and Water Quality Management Plan for Southern Illinois.

PLANNING AGENCY: GERP&DC
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part G

Implementation Oriented Projects

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: PUBLIC INFORMATION AND EDUCATION (TASK II A)

OUTPUT TITLE: Quarterly Reports

ABSTRACT: This project funded standard public information and educational activities. This includes press releases on meeting announcements, technical study results and advisory committee findings. Public exposure to the 208 program was increased by the publication of the following fact sheets on non-point sources: agriculture, urban storm water, management planning, lake studies, septic systems and municipal wastewater planning. Other activities included publishing of the newsletter Clean Water Horizons, Agency participation in Clean Streams month, talks shows on T.V. and radio, public meetings, slide and tape presentation on IEPA programs and work on exhibits for the State Fair.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: REGIONAL PLANNING COMMISSION PUBLIC PARTICIPATION ASSISTANCE (TASK II D)

OUTPUT TITLE: Quarterly Reports

ABSTRACT: This project funded contracts with Regional Planning Commissions throughout the State to provide public participation assistance to IEPA. Some of the activities included: stream use planning workshops, review of the IEPA reports, coordination of the Quad Cities' Urban Stormwater Committee, talks on 208, help with preparation for Regional Advisory Committee meetings, Workshops on the 208 five year strategy, sponsored a workshop on septic systems sponsoring a series of workshops on alternative and innovative methods for sewage treatment in small communities and assisted in publishing of the public information meetings and public hearings.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: PUBLIC PARTICIPATION (TASK II E)

OUTPUT TITLE: Quarterly Reports

ABSTRACT: This project funded public participation activities. This included preparing a summary of Agency responses to public comments in the 208 plan, providing assistance at Statewide Policy Advisory Committee meeting, working with the Department of Conservation to coordinate clean stream month activities and assisting the 208 staff to identify public participation activities.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COORDINATION WITH DESIGNATED AGENCIES (TASK XIII A)

OUTPUT TITLE: Quarterly Reports

ABSTRACT: This project funded IEPA liaison and coordination activities with designated management agencies. The major activities included reviewing projects and reports as well as attending water quality related meetings. No specific output was required under this grant.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: INSTITUTIONAL EVALUATION (TASK XIII C)

OUTPUT TITLE: An Inventory of Federal and State Water Quality Statutes and Regulations (June, 1980)

ABSTRACT: The inventory is an index to local, state and federal water quality statutes or regulations. The user refers to specific sections which contain the Federal, State or Local Enabling legislation. A matrix in the front of each chapter gives general information on legislation. Additional information about each Act is contained in the back of the Chapter. Many of the provisions are the subject of active legislative and administrative consideration; therefore, current references should be checked on an annual basis.

Several of the Enabeling Acts for local government (Part V) have been partially preempted by Acts found in Part III, in particular, the Illinois Environmental Protection Act, Illinois Rev. Stat. 1979, Ch. 111 1/2 par. 1101. Therefore, a specific area of local authority may be on the books but no longer valid. Illinois Home Rule governments appear to be developing an exception to preemption in some environmental areas such as siting solid waste disposal sites. The role of courts in determining the applicability of statutes and regulations should be considered when working with this inventory.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: INTERAGENCY COORDINATION OF NONPOINT SOURCE MANAGEMENT STRATEGIES (TASK VII A)

OUTPUT TITLE: Quarterly Reports

ABSTRACT: This project is a continuation of the FY78 project Coordination with Designated Agencies. Review and liaison activities were continued. This included funding the Technical Advisory Committee.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: PUBLIC INVOLVEMENT (TASK VIII A)

OUTPUT TITLE: Quarterly Reports

ABSTRACT: This project funded the 208 related activities of the public participation staff.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part G

Implementation Oriented Projects

Projects of the Northern Illinois Planning Commission

PROJECT TITLE: ORGANIZE ADVISORY COMMITTEE AND PUBLIC PARTICIPATION

OUTPUT TITLE: Project deferred to slow track schedule. Funded under slow track as: Organize Advisory Committees; Public Information and Public Participation Program (URPP 1003.01)

ABSTRACT:

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: FIRST YEAR PROGRAM SCHEDULE

OUTPUT TITLE: Project dropped from Fast Track grant, deferred to "Slow Track".

ABSTRACT: Project was funded in the FFY '78 Slow Track grant as work item 3: Develop First Year Program Schedule (URPP 1002).

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: ORGANIZATION OF COUNTY WATER QUALITY COMMITTEES

OUTPUT TITLE: Project was dropped from Fast Track work program. NIPC reapplied for the same project under slow track (item 2A, URPP 1001.01).

ABSTRACT:

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: COUNTY WATER QUALITY COMMITTEES ENABLING ACT (INTERGOVERNMENTAL AGREEMENT) (URPP 1004) (TASK 4)

OUTPUT TITLE: Legislation/draft model agreement

ABSTRACT: A major feature of the 208 plan for northeastern Illinois is the proposal to establish Countywide Water Quality Committees or similar coordinating bodies in each county. The purpose of these bodies is to provide a forum through which local management agencies and nongovernmental groups interested in water quality can communicate and reach joint advisory decisions on management matters, resolve conflicts or refer them to appropriate authorities for resolution, monitor progress in implementing the Plan, and maintain liaison with coordinating bodies in other counties and at the drainage basin and areawide scales.

A draft intergovernmental agreement for the establishment of the countywide committee was prepared by NIPC staff. The draft calls for a council of government-type organizations with direct membership of all management agencies in the county with routine operations to be carried on by a smaller executive committee chosen from that group. Copies of the final proposed agreement were transferred to the county coordinators. As of February 1982, four of the six counties have agreed to support committees.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: FINANCIAL SUPPORT FOR THE ILLINOIS-INDIANA BI-STATE COMMISSION (URPP 1010) (TASK 10)

OUTPUT TITLE: Minutes of meetings and Quarterly Report.

ABSTRACT: This project funded the time spent by the Commission in their development and review work on the 208 Water Quality Management Plan.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: COOPERATIVE DATA COLLECTION AND REPORTING NETWORK (URPP 1016.05) (TASK 16E)

OUTPUT TITLE: A Proposal for a Cooperative Data Collection Program (1979)

ABSTRACT: The report proposes a cooperative program to collect water quality data throughout the Fox River Basin. Participants in the proposed program include U.S. Geological Survey, Illinois EPA, Elgin Sanitary District, NIPC and members of the Fox Valley Wastewater Treatment Plant Operators Association. The objectives of the program are: 1) To monitor water quality, 2) To better define cause and effect relationships, 3) To involve local agencies and personnel, and 4) to share financing of the data collection program.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: ADOPTION OF INITIAL PLAN: CITIZEN PARTICIPATION (URPP 1019) (TASK 19)

OUTPUT TITLE: Summary of Public Comments Received on Areawide Water Quality Management Plan

ABSTRACT: The project consists of seven volumes. These contain the following information:

Volume 1 - Introduction
  Section I - General Comments
  Section II - Comments on Public Participation

Volume 2 - Section III - Comments on Technical Components

Volume 3 - Section IV - Comments on Management Components

Volume 4 - Section V - Comments on Specific Plan Review Statements

Volume 5 - Section Va - Comments on Specific Plan Review Statements
  Item M - Lake County Department of Planning, Zoning and Environmental Quality

Volume 6 - Section VI - Summary of Resolutions Commonly Used
  Section VII - Lists of Statements Received by August 11, 1978

Volume 7 - Changes to the Draft Plan Resulting from the Public Hearing Process

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: ORGANIZATION OF COUNTYWIDE WATER QUALITY COMMITTEES (URPP 1001.01) (TASK 2A)

OUTPUT TITLE: Organization of Countywide Water Quality Committees and Completion of Intergovernmental Agreements (January, 1981)

ABSTRACT: A major feature of the 208 plan for Northeastern Illinois is the proposal to establish Countywide Water Quality Committees or similar coordinating bodies in each county. The purpose of these bodies is to provide a forum through which local management agencies can discuss their implementation activities, maximize implementation within intergovernmental cooperation, and jointly address state and federal issues. The committees will be a medium for public participation in the continuing planning process. During the development of the 208 plan, a strong preference was expressed by local officials for this type of cooperative body rather than for a more centralized areawide management structure.

The report documents progress through December, 1980 in organizing countywide water quality committees within the region.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: DEVELOP GUIDELINES AND DIRECTIONS FOR COUNTYWIDE WATER QUALITY COMMITTEES (URPP 1001.02) (TASK 2B)

OUTPUT TITLE: Development of Guidelines for Countywide Committee Coordination

ABSTRACT: This document was prepared to guide the countywide water quality committees in the development of programs for coordinating local management decisions which affect water quality. The purpose of countywide coordination and elements of countywide coordination are discussed. In addition, a number of established processes through which countywide committees and their member agencies may be notified of proposed actions having adverse water quality impacts and given an opportunity to review and comment upon these actions are summarized. The report also presents information to all countywide water quality committees in deciding whether to establish a review process for activities or proposals which are not affected by existing review systems.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: DEVELOP FIRST YEAR PROGRAM SCHEDULE (URPP 1002)
(TASK 3)

OUTPUT TITLE: Development of First-Year Program Schedule

ABSTRACT: A manual was prepared to assist water quality management and coordination agencies in Northeastern Illinois and the Northeastern Illinois Planning Commission when developing a water quality implementation program for the six county area. The manual identifies the general contents of the program and the process by which it will be developed.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: ORGANIZE ADVISORY COMMITTEES; PUBLIC INFORMATION AND PUBLIC PARTICIPATION PROGRAM (URPP 1003.01) (TASK 4A)

OUTPUT TITLE: Quarterly Progress Reports; Minutes of AWQ Steering Committee

ABSTRACT: The output of this project is summarized well in Summary of Public Involvement by L. Aggens, NIPC Public Participation Advisor. Chapter 2, Organization of the Public Participation Program in Water Quality Management Planning for Northeastern Illinois summarizes the process by which the current public participation structure was developed. The chapter also details the approved public participation program. The structure and roles of the Planning Advisory Committees, Local Steering Committees, Drainage Basin Advisory Committees, Technical Advisory Committees, Task Forces and Individual Technical Advisors is discussed. In addition, several components involving the administration of the public participation program and work plan are detailed.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: DEVELOP AND IMPLEMENT PUBLIC EDUCATION AND INFORMATION PROGRAM ON INITIAL PLAN (1003.02) (TASK 4B)

OUTPUT TITLE: Press releases, plan amendment package, public participation bulletin

ABSTRACT: The objective of the project was to develop a public information program which would inform the public about the Water Quality Management Plan and enable them to become active in the water quality management planning process. Public information activities have included the development of:

Brochures
Portable Exhibits
Posters and Bumper Stickers
Slide Shows
Radio Spot Announcements
Television Spot Announcements
Press Releases and Information Kits
Radio and Television Appearances
Speakers Bureau
Newsletters
Quarterly Reports
Public Participation Bulletins
Public Appearances
Special Conferences and Seminars
Accountability Reports
Hearing Records
Plan Documents
Fact Sheets
Public Information Depository System
Workbooks and Surveys
Public Contract Reports

The public participation also included public hearings, field trips, commission meetings and public meetings. The public participation program is detailed in the Summary of Education and Informational Activities on 208 Plan, by L. Aggens, NIPC Public Participation Advisor.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: COUNTYWIDE WATER QUALITY COMMITTEE INTERGOVERNMENTAL AGREEMENTS (URPP 1004.01) (TASK 5)

OUTPUT TITLE: Organization of County Water Quality Committees and Completion of Intergovernmental Agreements

ABSTRACT: This project was operated in conjunction with URPP 1004 (FFY'78 Fast Track) and resulted in a draft model agreement for the organization of County Water Quality Committees. As of February 1981, four of the six counties have agreed to support committees. These are: Lake, McHenry, Kane and DuPage Counties.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: MODEL ORDINANCE ON WATER CONSERVATION (URPP 1005.03) (TASK 6B)

OUTPUT TITLE: Suggested Water Conservation Ordinance (March, 1980)

ABSTRACT: The region's Areawide Water Quality Management Plan recommends that all municipalities and counties seek continued reductions in water use to conserve water resources and to reduce wastewater flows. The Plan states that this should be accomplished through the modification of building codes by requiring water conserving plumbing fixtures, metering of all new developments, adoption of pricing policies, and the development of public education programs.

This model ordinance is intended to assist local governments in meeting the water conservation objectives of the Areawide Water Quality Management Plan. It has been prepared as a model to assist local units of government, particularly 208 management agencies, in developing and/or revising their local programs for water conservation.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: MODEL ORDINANCE ON PERFORMANCE ZONING (URPP 1005.04)
(TASK 6C)

OUTPUT TITLE: Performance Zoning

ABSTRACT: The first section of the book explains the basic concepts of performance zoning. Topics included are: variables, design, standards, site capacity and land use intensity, buffer yards, housing, transportation and various types of districts. The second section of the book is a model performance ordinance for Lake County, Illinois. The authors intended that this ordinance be adopted by other counties and municipalities. The ordinance discusses: the establishment of zoning districts, regulations, detailed use regulations, non conformities, conditional uses, development alternatives and businesses and administration and enforcement.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: CONTINUE INTERAGENCY COORDINATION (URPP 0003.71) (TASK 9A)

OUTPUT TITLE: Subcontracts for specific work items

ABSTRACT: This project funded NIPC liaison and coordination activities with designated management agencies and other units of government after the 208 Plan was adopted. Principal activities included efforts to obtain additional management agency acceptance of the 208 Plan, efforts to establish the countywide water quality committees called for in the plan, and efforts to inform affected agencies of the implications of the plan.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: ILLINOIS-INDIANA BI-STATE COMMISSION (URPP 0010.71) (TASK 9B)

OUTPUT TITLE: Minutes of meetings held

ABSTRACT: This project funded the time spent by the commission in their development and review work on the 208 Water Quality Management Plan.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: COOPERATIVE WATER QUALITY MONITORING PROTOTYPE (URPP 1016.07) (TASK 12)

OUTPUT TITLE: A Proposal for a Cooperative Data Collection Program (April, 1980)

ABSTRACT: This report presents the need for a cooperative data collection program in the Fox River Basin and specifies the program's objectives. A brief chronology of events leading to the design of the first year program is provided along with a summary of local and state support. The first year program is outlined along with the sampling program for the following year and a cost estimate. A number of recommendations are made which are intended to assist implementation of the program.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: INVENTORY OF LOCAL PROGRAMS AND ORDINANCES RELATED TO WATER QUALITY MANAGEMENT (URPP 1005.05) (TASK 26)

OUTPUT TITLE: Inventory of Local Programs and Ordinances for Water Quality Management

ABSTRACT: Two hundred sixty-seven designated management agencies with responsibility for comprehensive non-point source management (261 municipalities and 6 counties) were surveyed about their current ordinances and programs in the areas of stormwater detention, soil erosion control, material storage, de-icing programs, performance zoning, on-site waste treatment controls, animal controls, and street sweeping. Information was sought about ordinances in effect, methods of enforcement, number of enforcement personnel, equipment in use, and costs. Total response to the survey was 233 or 83.5 percent. Rates of return in individual counties ranged from 68 percent in McHenry to 100 percent in DuPage.

While many of the inventory findings cannot be effectively summarized due to their qualitative nature, the following points give some indication of the range of implementation activities already in place in the region. Of the 223 units responding:

166 have adopted stormwater detention requirements;

93 have adopted erosion and sedimentation control ordinances;

43 have subdivision or building regulations which encourage the maintenance of natural drainage in new development through performance zoning or other means;

33 own vacuum street-sweeping equipment (51 such sweepers are in use), while another 13 contract for vacuum-sweeping service.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: ANNUAL PLAN REVIEW AND REVISION (URPP 1026.01)
(TASK 27)

OUTPUT TITLE: Press releases, plan amendment package, public participation bulletin memos to Water Quality Management Agencies, and a summary of public comments on plan amendments

ABSTRACT: The package _Review Comments by the Governor of Illinois and the Regional Administrator U.S. Environmental Protection Agency_ details the plan amendments required for the certification and approval of the Water Quality Management Plan for Northeastern Illinois.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: PUBLIC PARTICIPATION, INFORMATION AND EDUCATION; ADVISORY COMMITTEES (URPP 1003.03) (TASK 4)

OUTPUT TITLE: Public Participation, Information and Education, Advisory Committees

ABSTRACT: The report describes the formation of three county Water Quality Committees, the activities of three Areawide Water Quality Committees (Areawide Planning Advisory Committee, Areawide Water Resources Technical Advisory Committee and Areawide Water Quality Steering Committee) and the Agriculture Task Force.

Public involvement in certain key issues and the public information/education program are described. The key issues highlighted are: a) Certification and Approval Conditions to the Initial 208 Plan, b) Procedures for making amendments to the 208 plan, c) Specific 208 Plan amendments, and d) Work program development.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: DEVELOP COUNTYWIDE WATER QUALITY COMMITTEE ANNUAL PROGRAM SCHEDULE (URPP 1002.01) (TASK 12)

OUTPUT TITLE: Anticipated Completion Date -- May 1, 1982

ABSTRACT: This work item calls for the countywide committees, with the Commission's support, to prepare initial water quality management implementation programs as described in the areawide 208 plan. Only one countywide committee -- the DuPage County Regional Planning Commission -- has been organized for a sufficient period to have initiated preparation of such a program. The RPC's program submittal will concentrate on current water quality programs in implementation in the county which will provide the base-line for future implementation activities. Other intergovernmental efforts with probable water quality impacts, including flood control and recreational programs, will also be summarized in the program. The program materials will be delivered to the Commission by May 1, 1982.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: PROGRAM FOR INTERGOVERNMENTAL PLAN IMPLEMENTATION

OUTPUT TITLE: Financing Intergovernmental Management of Water Quality in Northeastern Illinois (Anticipated Completion Date September, 1982)

ABSTRACT: The Areawide WQM Plan identifies a variety of ways in which plan implementation will be accomplished through intergovernmental activity. The plan sets forth a management structure through which the designated management agencies may work to carry out these cooperative implementation activities.

The study is defining the cost of operating the intergovernmental management structure and exploring methods of financing it. Proposals will be developed and discussed with management agencies.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY'80

208 PLANNING IN ILLINOIS

Part G

Implementation Oriented Projects

Projects of the Southwestern Illinois Metropolitan and Regional Planning Commission

PROJECT TITLE: OPERATIONALIZE, FORMALIZE, AND DETAIL THE ROLES, RESPONSIBILITIES, AUTHORITIES AND RELATIONSHIPS BETWEEN THE AREAWIDE MANAGEMENT COORDINATING BOARD (AMCB) AND THE DESIGNATED MANAGEMENT AGENCIES (TASK 1)

OUTPUT TITLE: The Making of a 208 Management System (Report SWIL-MAPC 79-11, August, 1979)

ABSTRACT: The report presents and documents the various activities and processes involved in organizing the 208 Management System for the designated area comprised of Madison, Monroe and St. Clair Counties, Illinois. Major sections address the management agency designation process and the selection and organization of the Areawide Management Coordinating Board. The impact of public involvement is documented throughout the report.

PLANNING AGENCY: SIMPAC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: DESIGN OF EDUCATION/INFORMATION PROGRAM (TASK 2)

OUTPUT TITLE: 208 Education/Information Program Design (Report SWIL-MAPC 79-14, September, 1979)

ABSTRACT: This report documents the results of work activities involved in the task of designing an education/information program for the voluntary phase of 208 plan implementation. Major sections address: (1) 208 program background and educational needs; (2) an education/information framework for both urban and agricultural water quality-related problems; and (3) recommendations and commitments for first-year education/information activities.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: INITIATE THE PUBLIC INVOLVEMENT PROGRAM IN THE CONTINUING PLANNING PROCESS (TASK 3)

OUTPUT TITLE: Public Participation in the Continuing Planning Process (Report SWIL-MAPC 79-12, July 1979)

ABSTRACT: This report details public participation activities accomplished during the continuing planning process (9/78-8/79). The manner and degree to which the Agency (SIMAPC) responded to federal requirements and local objectives are documented. Chapter 1 details local goals and objectives, public participation requirements and the organization of the report. Chapter 2 provides a description of the formal 208 public involvement organizational structure. The functions, membership and accomplishments of specific committees are discussed, as well as their impact on the Continuing Planning Process (CPP).

Chapter 3 documents the various public information program activities during 9/78-8/79 and explains their role in the CPP. Committee and Informational meetings are documented in Appendix A.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: DEVELOP ANNUAL PLAN REVISION PROCEDURES (TASK 4)

OUTPUT TITLE: Water Quality Management Plan Revision Procedures (Report SWIL-MAPC 80-08, April, 1980)

ABSTRACT: This report establishes a data management system for data retrieval related to continuing planning and 208 plan implementation efforts. Proposed procedures for annual and interim Water Quality Management Plan revisions are also included.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: PUBLIC PARTICIPATION; EDUCATION/INFORMATION PROGRAM IN THE CONTINUING PLANNING PROCESS (TASK 4)

OUTPUT TITLE: Quarterly Public Involvement Reports (6 quarters beginning January, 1980 and ending June, 1981)

ABSTRACT: Typical contents include:

PUBLIC PARTICIPATION

1. Public Participation Record

   A record of all meetings with organizations and individuals. Includes: Name of Organization, Date, Type of Presentation, Number of People in Attendance, Climate of Meeting and Impact on 208 Program.

2. Minutes of Meeting

   Areawide Management Coordinating Board
   Environmental Advisory Task Force
   Stormwater Technical Advisory Committee

INFORMATIONAL MATERIALS

1. SIMAPC Newsletter
2. Sludge Newsletter
3. St. Clair County Farm Bureau Notes
4. Madison County Farm Bureau News

MEDIA COVERAGE (Press Clippings, etc.)

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: PUBLIC PARTICIPATION; EDUCATION/INFORMATION PROGRAM IN THE CONTINUING PLANNING PROCESS (TASK 4)

OUTPUT TITLE: On-site Sewage Disposal Seminar

ABSTRACT: The objectives of the seminar were (1) to promote awareness of water quality hazards associated with on-site systems, (2) to acquaint to contractors, inspectors, and homeowners with applicable physical and institutional constraints, and with alternative on-site systems that may be suitable in light of these limitations, and (3) to stress the necessity of adequate pre-installation planning, quality control during installation, and proper maintenance. Co-sponsored by the Illinois Department of Public Health, the seminar included lectures, slide presentations, a film and distribution of publications and fact sheets relevant to the lecture topics.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: PUBLIC PARTICIPATION; EDUCATION/INFORMATION PROGRAM IN THE CONTINUING PLANNING PROCESS (TASK 4)

OUTPUT TITLE: Construction Site Erosion Control Seminar

ABSTRACT: This seminar was designed as a training workshop for those individuals or agencies expected to play a major role in implementing WQM Plan recommendations related to construction site erosion control. A training manual, SIMAPC Erosion Control Training Workbook, was developed for the seminar. The workbook was designed as a self-training instruction mechanism in conjunction with the Model Ordinance and the Standards and Specifications handbook. A slide show depicting construction-related erosion problems was presented. The staff described the impact of construction erosion on water quality and discussed the Plan's recommendations for alleviating the problem. Attendees became more cognizant of the nature and magnitude of construction erosion, and left the seminar better equipped to effect solutions in their respective municipalities.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part H

Groundwater

208 PLANNING IN ILLINOIS

Part H

Special Water Resources: Groundwater

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: ASSESS GROUNDWATER QUALITY AND IDENTIFY EXISTING PROBLEM AREAS (TASK VII A)

OUTPUT TITLE: Status of Groundwater Data Base in Illinois with Recommendations for Groundwater Quality Management Planning (1978)

ABSTRACT: The report summarized the status of the existing data base for groundwater resource information and presented a plan of action for integrating groundwater into the Statewide Water Quality Management Planning Program. The elements required to develop a groundwater resource management plan were identified and costs for producting each element was estimated.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: 1977 Initial 208 Grant

PROJECT TITLE: GROUNDWATER QUALITY (TASK VII C)

OUTPUT TITLE: Illinois Groundwater Quality Data Summary (June 1980)

ABSTRACT: Data from the past 40 years (1940 through 1979) were sorted into five aquifer categories: 1) drift wells < 50 feet deep, 2) drift wells > 50 feet deep, 3) Pennsylvanian aquifer, 4) shallow limestone and dolomite aquifers, and 5) deep sandstone aquifer. Median chemical concentrations per township were plotted and mapped for six parameters: 1) Total dissolved solids (Tds), 2) hardness (as $CaCO_3$), 3) sulfate, 4) nitrate, 5) chloride, and 6) iron. The variability of each parameter was determined in areas where adequate data was available, and historical groundwater quality trend analyses were performed for 21 municipal water supply well fields. Water quality trends were detected for two sand and gravel well fields, three Silurian dolomite, and two deep sandstone aquifer well fields. The data were used to produce statewide ground water quality maps for the five aquifer categories.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: GROUNDWATER UTILIZATION (TASK III A)

OUTPUT TITLE: Groundwater Withdrawal Data Summary for Illinois NPDES Permits (January 1981)

ABSTRACT: In 1978, an estimated 945 million gallons per day of groundwater were withdrawn in Illinois. Most groundwater withdrawn is discharged to Illinois streams after use. The quantity discharged needs to be established to provide a data base for further studies of water quality and water resource mangement.

The purpose of this study was to compile groundwater withdrawals for approximately 2,800 municipal and industrial facilities listed by the Illinois Environmental Protection Agency as sources of point discharge. The groundwater withdrawal were estimated from the Water Surveys' Hydrologic File and Illinois Water Use Data Base. The results are presented as both machine tabulations and maps.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: GROUNDWATER RUNOFF (TASK III B)

OUTPUT TITLE: Groundwater Discharge to Illinois Streams (December 1980)

ABSTRACT: Groundwater contribution to streamflow in the form of base flow was estimated for 78 drainage basins in Illinois using the graphical hydrograph separation technique. Base flow probability distributions were determined for each basin during high streamflows (10% flow-duration), median streamflows (50% flow-duration), and low streamflows (90% flow-duration) based on the analysis of the most recent 10 to 20 years of historical records. The results were presented in the form of log 10, probability curves defining the base flow probability distribution for each basin over the range of streamflows from the 10% flow to the 90% flow. The statewide distributions of median base flow values at each of the three flows studied were mapped and regional divisions were drawn.

Median base flow per square mile of drainage area generally increases from the southwest to the northeast at all three flow durations. Highest values were found in the heavily urbanized Chicago metropolitan area and the driftless area in Northwest Illinois. Lowest values generally coincided with the "claypan" area in the southwest and south-central parts of the state. Numerous factors exert their effects on the regional distribution of base flow including but not limited to land use, point source discharges, surficial soil permeability, basin topography, and climatology.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: GROUNDWATER RUNOFF TASK III B)

OUTPUT TITLE: Surface Water -- Groundwater Quality Relationships for Central Illinois Watershed (January 1981)

ABSTRACT: Shallow groundwater quality data, 10 years of monthly surface water quality and mean daily flow data were used to determine groundwater-surface water quality relationships for the Mackinaw River above Congerville, Illinois. The 40-year medians of shallow groundwater quality data were shown to be of limited value for predicing the base flow water quality for this basin. Stepwise multiple regression analysis of surface water quality and flow data revealed decreasing concentrations of sulfate in base flow and surface runoff for the study period. Analysis of data also revealed significant relationships between the amount of base flow and base flow sulfate, chloride, and nitrate concentrations. Relationships between the amount of surface runoff and the concentrations of total dissolved solids, sulfate, and total iron in the surface runoff were determined.

The results of the multiple regression analysis are discussed in terms of their importance to the development of water quality management strategies and the determination of realistic water quality goals. Monthly average chemical load calculations indicate that on a yearly basis only 30 to 40 percent of the total dissolved solids, hardness, sulfate, and nitrate loads can be attributed to surface runoff. In the average year about 60 to 80 percent of the total iron load can be attributed to surface runoff. Surface runoff chloride loads vary from 0 to 70 percent of total loads.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: DEVELOPMENT OF A WATER QUALITY MANAGEMENT GROUNDWATER INTEGRATION PROGRAM - TASK C - GROUNDWATER INSTITUTIONAL EVALUATION (81-68)

OUTPUT TITLE: Anticipated Completion Date - September 1983

ABSTRACT: This project will include several tasks needed in working towards a statewide strategy for ground water management. Tasks include reviewing of the roles of state agencies in groundwater management, indentifying gaps in current control strategies and developing strategy proposals.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY 81

PROJECT TITLE: DEVELOPMENT OF A WATER QUALITY MANAGEMENT-GROUNDWATER INTEGRATION PROGRAM TASK A. AQUIFIER SUSCEPTIBILITY MAPPING (81-68)

OUTPUT TITLE: Anticipated Completion Date - December 1982

ABSTRACT: Maps will indicate susceptability of surficial aqufers to shallow (less than about 10 feet deep) and deeper (less than about 50 feet deep) pollution sources. State maps will be developed on a scale of 1:500,000 and working maps will be developed on a scale of 1:250,000. A final report will review susceptibility criteria, the maps and their applications to water quality management planning.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'81

PROJECT TITLE: DEVELOPMENT OF A WATER QUALITY MANAGEMENT GROUNDWATER INTEGRATION PROGRAM TASK B STUDY OF GROUNDWATER IN THE SANGAMON BASIN (81-68)

OUTPUT TITLE: Anticipated Completion Date - August 1982

ABSTRACT: This project is a comprehensive review and analysis of the groundwater resources in the Sangamon River Basin. Task include analyzing information on aquifer susceptibility and contamination sources, characterizing groundwater flow, conducting trend analysis of water quality data from public water supplies, assessing groundwater use and resource use conflicts and analyzing the baseflow contribution to surface water quality. The findings will be interpreted and discussed.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FY'81

208 PLANNING IN ILLINOIS

Part H

Special Water Resources: Groundwater

Projects of the Southwestern Illinois Metropolitan
and Regional Planning Commission

PROJECT TITLE: GROUNDWATER RESOURCE PLAN OF STUDY (TASK 8)

OUTPUT TITLE: Groundwater Resource - Plan of Study (December 1798)

ABSTRACT: This report detailed the results of a joint SIMAPC/Illinois State Water Survey effort to develop a Plan of Study for A Groundwater Quality Management Program. The report includes: (1) the goals and objectives of the study, (2) the importance of groundwater resources to the study area, (3) the data inventory, (4) existing data gaps and their magnitude, (5) alternative levels of effort to fill data gaps and (6) the recommended Plan of Study.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '77 Supplemental

208 PLANNING IN ILLINOIS

Part I

Special Water Resources: Lakes

208 PLANNING IN ILLINOIS

Part I

Special Water Resources: Lakes

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: DEVELOP STRATEGY FOR CLEAN LAKES PROGRAM

OUTPUT TITLE: Clean Lakes Strategy for Illinois

ABSTRACT: This staff report outlined a proposed "Clean Lakes" strategy for Illinois. The program would detail the problems of Illinois' inland lakes and develop, assess, and implement water quality management plans for them.

Strategy elements include: 1) collection, organization, analysis, and dissemination of lake data; 2) coordination and technical assistance; 3) development of general and specific lake management plans; 4) evaluation of lake water quality management techniques; and 5) development of an implementation framework.

Resource requirements, funding sources, roles of various organizations, and the schedule for such a program are discussed. In addition, lake water quality management techniques and protection and restoration programs in other states are reviewed.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '77 Initial 208 Grant

PROJECT TITLE: ASSESSMENT OF LAKE PROBLEM

OUTPUT TITLE: Assessment and Classification of Illinois Lakes

ABSTRACT: Water quality management planning for Illinois lakes was initiated under the 208 program with a preliminary problem assessment for 353 lakes. Included were public water supply impoundments, all state and publicly owned lakes with surface areas of 20 acres or greater and non-publicly owned lakes with surface areas of 100 acres or more. The assessment was based on existing lake data gathered from various sources, qualitative evaluations by persons familiar with the lakes, use of LANDSAT satellite multispectral scanner data and a lake sampling program for 108 lakes during the summer of 1977.

Based on the assessment data, a preliminary lake classification system was developed. Illinois lakes were classified into eight major groups according to current condition and the potential of the lake for exhibiting problems with eutrophication and/or sediment pollution.

Current condition was determined for each lake to be excellent, good, fair or poor by aggregating assigned values for water transparency; severity of use impairment from sediment, algae or aquatic macrophytes and lake condition judgments. The cleanest lakes were considered to be those clearest with least use impairment (i.e., those with the lowest total values).

The potential of each lake for exhibiting problems resulting from nutrient enrichment and sediment pollution was determined from values assigned for mean depth, lake capacity/drainage area ratio and watershed land cover. Deep lakes with high capacity/drainage area ratios and forested watersheds (i.e., with the lowest total values) were considered to have the lowest problem potential.

The majority of the lakes (197, or approximately 56 percent) fell into the "fair to poor quality" and "high potential for exhibiting problems" categories.

Lakes within each major group were assigned a preliminary priority number designating their importance to the general public by using the criteria of public accessibility, lake size, population served and usage type and intensity. Possible water quality management strategies were suggested for each group.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY 77 Initial 208 Grant

PROJECT TITLE: DEVELOPMENT OF A PROGRAM FOR COLLECTING, ORGANIZING AND ANALYZING LAKE DATA (VIII E)

OUTPUT TITLE: Pilot Ambient Lake Monitoring Program

ABSTRACT: The lake sampling program for summer 1979 was developed. Lakes, sites, times and parameters to be measured were determined. Arrangements were made with Illinois EPA's Field Operations Section, Division of Water Pollution Control to perform the lake sampling and with the Division of Laboratory Services to perform the required chemical analysis. Two professionals were hired to assist Field Operations Section personnel in accomplishing the lake sampling. Contracts were executed with Western Illinois University, Water Laboratory to perform the plankton and chlorophyll analysis. Field and laboratory data forms were developed which could be directly keypunched into STORET. Meetings were held with the Illinois Department of Conservation and Lake County Health Department to explore cooperative arrangements for lake sampling.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY 78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of 63 Illinois Lakes

ABSTRACT: An investigation of 63 lakes was undertaken in 1979 by the Illinois Environmental Protection Agency to determine the current quality and problems for representative Illinois lakes. Relationships between and within lakes were examined to develop an effective lake monitoring strategy, to help establish realistic water quality goals and standards, and to aid in the development of a functional lake classification system based on present water quality, usability, and potential quality. Fifteen representative lakes were sampled monthly from May through October and an additional 48 were sampled in June and August or September. A wide range of water quality parameters and phytoplankton were analyzed in water samples to define the range and variability of characteristics during the intense recreational use season. Parameters sampled were: thermal stratification, dissolved oxygen, transparency, turbidity, suspended solids, conductivity, alkalinity, nitrate and nitrite nitrogen, ammonia nitrogen, organic nitrogen, total phosphorus, dissolved phosphorus, total organic carbon chloride, sulfate, fecal coliforms, metals and arsenic, organochlorine compounds, phytoplankton and chlorophyll. Bottom sediments were also collected for analysis of heavy metals and organochlorine compounds and nutrients and organics.

For purposes of comparing lakes, Carlson's Trophic State Index was calculated.

Numerous recommendations were made. These included: an ambient lake monitoring program, a volunteer Lake Monitoring Program, intensive Lake Monitoring, IEPA diagnostic studies under 314, methods of data collection, handling and analyses, lake classification, morphological/hydrological data and service function.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Chemical Analysis of Surficial Sediments from 63 Illinois Lakes (Summer 1979)

ABSTRACT: Two hundred seventy-three samples were collected from 63 Illinois lakes in summer 1979. These samples were analyzed for percent volatile solids, chemical oxygen demand (COD), nutrients, heavy metals and organochlorine compounds. An attempt was made to correlate fish flesh pesticide concentrations with sediment concentrations. No simple linear relationships were discerned with the small fish flesh data base available.

Major results were as follows:

a. NUTRIENTS AND ORGANICS: Highest concentrations of % volatile solids (VS), total Kjeldahl nitrogen (TKN), chemical oxygen demand (COD), and total phosphorus (TP) were found in glacial lakes and backwaters. Seventy-three percent of the lakes sampled had mean VS concentrations between 6-10%, while 74% had COD's between 45-95 mg/kg. Illinois lake sediments contain, on the average, less TKN ($\bar{X}$ = 3710 + 2066 mg/kg) and TP ($\bar{X}$ = 703 ± 476 mg/kg) than lakes in other studies.

b. HEAVY METALS AND ARSENIC: Cadmium and chromium concentrations were undetected or very low in Illinois lakes. Highest lead, zinc, and mercury concentrations were found in glacial lakes and Skokie Lagoons -- all proximate to the Chicago metropolitan area. Arsenic concentrations were highest where there was historical use of sodium, arsenate for weed control, copper concentrations (up to 368 mg/kg) in sediments from lakes where copper sulfate was applied as an algicide. Lowest iron and manganese concentrations were found in glacial lake sediments, while highest concentrations were found in the sediments of the deeper southern Illinois lakes.

c. ORGANOCHLORINE COMPOUNDS: Lindane, methoxychlor, aldrin, and endrin were not detected in Illinois lake sediments. Highest levels of dieldrin, heptachlor, heptachlor epoxide, and chlordane were found in sediments from lakes with watersheds primarily in row crop cultivation. PCB's were highest in lakes proximal to urban areas, while highest DDT concentrations were found in Crystal Lake and Skokie Lagoons.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Lake Shabbona (Fox Basin Segment A-03)

ABSTRACT: The Illinois Environmental Protection Agency conducted an intensive survey of Lake Shabbona and its tributaries on six sampling dates from May 31 to October 24, 1979 to determine the current water quality and trophic state of the lake and to identify specific problems. Vertical dissolved oxygen/temperature profiles were taken, surface and bottom water samples collected, Secchi disc depth measured. Sediment samples collected at three sites within the lake. The report contains the data collected during the sampling period.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Pittsfield City Lake

ABSTRACT: Samples for physical, chemical, and biological analyses were collected from Lake Pittsfield by the Illinois EPA on a monthly basis from May 23 through October 29, 1979. Vertical dissolved oxygen/temperature profiles were taken, Secchi disc depth measured, and surface and bottom water samples and sediment samples collected at three sites in the lake. Water quality and macroinvertebrate samples were also collected from Blue Creek approximately one mile upstream from the lake. The report contains the data collected during the sampling period.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Otter Lake (Illinois River Basin Segment A-06)

ABSTRACT: During the summer 1979, the Illinois Environmental Protection Agency conducted an intensive sampling program on Otter Lake and its upstream West Fork Otter Creek watershed. Major objectives of the lake sampling program were: 1) to augment and update the existing lake data base necessary for lake classification and prioritization; 2) to determine the current trophic status of each lake; and 3) to identify in-lake water quality problems and probable causes.

Physical, chemical and biological samples were collected from Otter Lake on a routine monthly basis from May through October, 1979. Water quality and macroinvertebrate samples were also collected from the West Fork Otter Creek approximately one mile upstream from the lake. Analysis of the data indicated higher turbidity in May than any other month with an average Secchi disc transparency of 13 inches. This high turbidity is generally due to the high total suspended solids concentrations also present in the May samples.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Round Lake (Fox River Basin Segment B-01)

ABSTRACT: The Illinois Environmental Protection Agency conducted an intensive survey of Round Lake on six sampling dates from May 24 through October 25, 1979 to determine the current water quality and trophic state of the lake and identify specific problems. Vertical dissolved oxygen temperature profiles were taken, Secchi disc depth measured, and surface and bottom water samples and sediment samples were collected at these sites in the lake.

Using 1979 field observations, monitoring data, and existing Agency rating factors, Round Lake was classified in fair condition, with a high potential to exhibit problems with eutrophication and/or sediment pollution. Secchi disc transparency, chlorophyll a, and total phosphorus concentrations indicate that Round Lake is meso-eutrophic. Carlson's Trophic State Index values calculated for Round Lake using 1979 Secchi transparency, chlorophyll *a*, and total phosphorus were 60.3, 53.6 and 47.4, respectively.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Lake Taylorville (Sangamon River Basin Segment A-04)

ABSTRACT: During summer 1979, the Illinois Environmental Protection Agency conducted an intensive sampling program on Lake Taylorville and its upstream South Fork Sangamon River watershed. Major objectives of the lake sampling program were: 1) to augment and update the existing lake data base necessary for lake classification and prioritization; 2) to determine the current trophic status of each lake; and 3) to identify in-lake water quality problems and probably causes.

Physical, chemical and biological samples were collected from Lake Taylorville on a routine monthly basis from May through October, 1979. Water quality and macroinvertebrate samples were also collected from the South Fork Sangamon River approximately one mile upstream from the lake; in addition, water quality samples were collected approximately 100 feet below the dam. Analysis of the data indicated average Secchi disc transparencies of 12 inches. Two factors probably account for high turbidity even though the watershed has relatively low erosion rates. One factor is the high ratio of watershed to lake capacity (73.2). The other factor is the high amount of fine clay in the lake sediment, which causes it to remain in suspension for long periods.

Chemical analysis of tributary water samples indicated better water quality downstream from the lake than upstream. Macroinvertebrate sampling also indicated that organic enrichment was present upstream.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Lake Egypt May-October 1979 (Ohio River Basin Segment A-03)

ABSTRACT: An investigation of Lake of Egypt and watershed in southern Illinois was conducted on six sampling dates from May 30 through October 30, 1979. In addition to monthly water quality and phytoplankton sampling, bottom sediments were collected from the lake and two stream locations for analysis of heavy metals and organochlorine compounds.

Surface water samples were collected at three locations and bottom water samples at two sites for selected physical, chemical, and biological parameters. Temperature and dissolved oxygen measurements were made at each site from the surface to bottom at two feet intervals.

The occurrence of hypolimnetic oxygen depletion and mean Secchi transparency and total phosphorus values of 1.07 meters and 0.025 mg/1, would categorize Lake of Egypt trophic status as eutrophic.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Stephen A. Forbes Lake May-October 1979 (Wabash River Basin Segment A-08)

ABSTRACT: An investigation of Stephen A. Forbes Lake and watershed, Marion County, Illinois, was conducted on six sampling dates from May 24 through October 24, 1979. In addition to monthly water quality and phytoplankton sampling, bottom sediments were collected from the lake and two stream locations for analysis of heavy metals and organochlorine compounds.

Surface water samples were collected at three locations and bottom water samples at two Forbes Lake sites for selected physical, chemical, and biological parameters. Temperature and dissolved oxygen measurements were made at each site from the surface to bottom at two feet intervals.

Traditional lake classifications using hypolimnetic oxygen depletion criteria would classify Stephen A. Forbes Lake as eutrophic. Secchi transparencies substantially less than 2.0 meters, total phosphorus concentrations exceeding 0.02 mg/l, and the existence of nuisance blue-green algae bloom conditions from July through September support this assessment.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Lake Mattoon June-October 1979 (Wabash River Basin Segment A-09)

ABSTRACT: An investigation of Lake Mattoon and watershed, Coles, Cumberland, and Shelby Counties, Illinois, was conducted on six sampling dates from June 5 through October 31, 1979. In addition to monthly water quality and phytoplankton sampling, bottom sediments were collected from the lake and four stream locations for analysis of heavy metals and organochlorine compounds. Water quality was assessed at one location in the Little Wabash River and three other Lake Mattoon tributaries along with macroinvertebrate communities at these sites. Land use in the lake watershed was estimated from existing Agency data.

Benthic macroinvertebrate communities in the Little Wabash River and Bush Creek upstream from Lake Mattoon, categorized both sites as unbalanced. Notable stream degradation on the basis of fauna present was apparent in Clear Creek.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Paradise Lake May-October 1979 (Wabash River Basin Segment A-09)

ABSTRACT: An investigation of Paradise Lake and watershed, Coles County, Illinois, was conducted on six sampling dates from May 22 through October 31, 1979. In addition to monthly water quality and phytoplankton sampling, bottom sediments were collected from the lake and two stream locations for analysis of heavy metals and organochlorine compounds. Water quality in the Little Wabash River was assessed at two locations along with macroinvertebrate communities at these sites. Land use in the lake watershed was estimated from existing Agency data.

Surface water samples were collected at three locations and bottom water samples at two Paradise Lake sites for selected physical, chemical, and biological parameters. Temperature and dissolved oxygen measurements were made at each site from the surface to bottom at two feet intervals.

Macroinvertebrate community structure in the Little Wabash River upstream from Paradise Lake indicated polluted stream conditions with sludgeworms, midges, mosquitoes and snails predominant organisms. Sludge in the stream bottom along with a sewage odor was attributed to discharges from residential septic systems. Diverse community structure in the Little Wabash downstream from the lake indicated improved water quality conditions.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Lincoln Trail Lake (Wabash River Basin Segment B-01)

ABSTRACT: During the summer 1979, the Illinois Environmental Protection Agency conducted an intensive sampling program on Lincoln Trail Lake and its upstream Sandy Branch watershed. Major objectives of the lake sampling program were: 1) to augment and update the existing lake data base necessary for lake classification and prioritization; 2) to determine the current trophic status of each lake; and 3) to identify in-lake water quality problems and probable causes.

Physical, chemical and biological samples were collected from Lincoln Trail Lake on a routine monthly basis from May through October, 1979. Water quality and macroinvertebrate samples were also collected from Sandy Branch approximately 100 yards upstream from the lake and macroinvertebrate samples only immediately below the dam.

Lincoln Trail is a very productive lake with most of the necessary nutrients appearing to be transported from hypolimnetic waters to the epilimnion, even during periods of heavy rainfall.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Cedar Lake (Fox River Basin Segment B-01)

ABSTRACT: The Illinois Environmental Protection Agency conducted an intensive survey of Cedar Lake on six sampling dates from May 29 through October 17, 1979. Vertical dissolved oxygen/temperature profiles were taken, Secchi disc depth measured, and surface and bottom water samples and sediment samples were collected at three sites in the lake. Major objectives of the lake sampling program were to augment and update the existing lake data base for lake classification and prioritization, to determine the current trophic status of each lake, and to identify in-lake water quality problems and probably causes.

Secchi disc transparency, chlorophyll and total phosphorus concentrations in Cedar Lake met accepted criteria for placement in the mesotrophic range in 1979 as well as 1973. Trophic State Index (TSI) values calculated for Cedar Lake, using 1979 Secchi transparency, chlorophyll a, and total phosphorus were 46.2, <31.3, and 47.1, respectively. A TSI value of 40-50 mg/l appears characteristic of Cedar Lake, which by trophic condition, classifies it as one of the best in the state.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Long Lake (Fox River Basin Segment B-01)

ABSTRACT: The Illinois Environmental Protection Agency conducted an intensive survey of Long Lake and its tributaries on six sampling dates from May 30 through October 18, 1979 to determine the current water quality and trophic state of the lake and to identify specified problems. Vertical dissolved oxygen/temperature profiles were taken, Secchi disc depths measured, and surface and bottom water samples and sediment samples were collected at three sites in the lake.

The closing of the Round Lake Sanitary District should have a major impact on reducing the eutrophication process in Long Lake. According to the USEPA (1975) the Round Lake Sanitary District supplied 81.5% of the annual total phosphorus loading and 40.6% of the annual total nitrogen loading to Long Lake.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Devils Kitchen Lake May-October 1979 (Big Muddy River Basin Segment A-06)

ABSTRACT: An investigation of Devils Kitchen Lake and watershed, Williamson County, Illinois, was conducted on six sampling dates from May 31 through October 25, 1979. In addition to monthly water quality and phytoplankton sampling, bottom sediments were collected from the lake and two stream locations for analysis of heavy metals and organochlorine compounds. Water quality in Grassy Creek was assessed at two locations along with macroinvertebrate communities at these sites. Land use in the lake watershed was estimated from aerial photographs.

Surface and bottom samples were collected at three locations in Devils Kitchen Lake for selected physical, chemical, and biological parameters. Temperature and dissolved oxygen measurements were made at each site from the surface to bottom at two feet intervals.

Diverse benthic macroinvertebrate community structure was evident in two Grassy Creek locations, with high proportions of intolerant organisms indicating good water quality.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Raccoon Lake June-October 1979 (Kaskaskia River Basin Segment A-02)

ABSTRACT: An investigation of Raccoon Lake and watershed, Marion County, Illinois, was conducted on six sampling dates from June 6 through October 24, 1979. In addition to monthly water quality and phytoplankton sampling, bottom sediments were collected from the lake and the stream locations for analysis of heavy metals and organichlorine compounds.

Surface water samples were collected at three locations and bottom water samples at one Raccoon Lake site for selected physical, chemical, and biological parameters. Temperature and dissolved oxygen measurements were made at each site from the surface to bottom at two feet intervals.

Secchi transparencies substantially less than 2.0 meters (X=0.32 m) and total phosphorus concentrations greatly exceeding 0.02 mg/l on a continual basis, categorize Raccoon Lake as highly eutrophic. Euglenoid predominance in late summer-early fall algal biomass substantiates this assessment.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COLLECTION AND ANALYSIS OF WATER QUALITY DATA FOR A LAKE CATEGORY CONTROL STRATEGY (TASK VIII F)

OUTPUT TITLE: Limnology of Johnson Sauk Trail Lake (Rock River Basin Segment A-01)

ABSTRACT: The Illinois Environmental Protection Agency conducted an intensive survey of Johnson Sauk Trail Lake on five sampling dates from June 20 through October 30, 1979 to determine the current water quality and trophic state of the lake and to identify specific problems. Vertical dissolved oxygen/temperature profiles were taken, Secchi disc depth measured, and surface and bottom water samples and sediment samples were collected at three sites within the lake. The lake is a eutrophic lake.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

208 PLANNING IN ILLINOIS

Part I

Special Water Resources: Lakes

Projects of the Northeastern Illinois Planning Commission

PROJECT TITLE: SITE SPECIFIC INVESTIGATION: SKOKIE LAGOON (URPP 1025) (TASK 16)

OUTPUT TITLE: Phase 1 Study Application Skokie Lagoons (Section 314 Clean Water Act)

ABSTRACT: This project funded the preliminary research necessary for submission of a phase 1 diagnostic-feasibility study for Skokie Lagoons under Section 314 of the Clean Water Act.

The diagnostic portion of the study will include gathering information to determine the limnological, morphological, demographic, socioeconomic, and other pertinent characteristics of the lake and its watershed. This information will provide an understanding of the lake, specifying the location and loading characteristics of significant sources polluting the lake.

The feasibility portion of the study includes:

1. Analyzing the diagnostic information to define methods and procedures for controlling the sources of pollution;

2. Determine the most energy and cost efficient procedures to improve the quality of the lake for maximum public benefit; and

3. Developing a technical plan and milestone schedule for implementing pollution control measures and in-lake restoration procedures.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part I

Special Water Resources: Lakes

Projects of the Southwestern Illinois Metropolitan
and Regional Planning Commission

PROJECT TITLE: LAKE CONSERVATION AND RESTORATION (TASK 9)

OUTPUT TITLE: Lake Conservation and Restoration: Report on Highland Silver Lake (February 1979)

ABSTRACT: The 208 Water Quality Management Plan for the Madison, Monroe, and St. Clair counties recognized the need for additional planning to conserve and/or restore the natural and man-made lakes within the designated area. These lakes are valuable resources that provide for many uses, including public water supply, recreation and flood control. The water quality and useful life of these lakes, however, are adversely affected by non-point source pollutants such as: sediment, fertilizers, and pesticides carried by agricultural runoff; metals, oil, and grease, and sediment from urban storm water runoff; and effluent from septic tanks.

To provide the basis for undertaking remedial and protective measures, all lakes in the designated area in excess of 20 acres pool area were assessed to determine their water quality problems. Based on the results of the assessment activities, priorities were established for the preparation of conservation and/or restoration plans for publicly owned lakes. A preliminary plan for one of the highest priority lakes, Highland Silver Lake, is presented in this report.

The report is organized in two sections; Section I provides a description of the lake assessment and prioritization process and Section II discusses water quality problems, alternative solutions, and a recommended course of action for Highland Silver Lake.

Public involvement played a major role in the selection of a plan for Highland Silver Lake (see Determination of Priorities for Conservation Plans -- Task #5 FWPC Planning Grant P005215-04).

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '77 Supplemental

PROJECT TITLE: CONSERVATION AND PRESERVATION OF HORSESHOE LAKE (TASK 1)

OUTPUT TITLE: Conservation and Preservation of Horseshoe Lake: Phase I (Report SWIL-MAPC 80-01, January 1980)

ABSTRACT: This report investigates the major source of sedimentation in Horseshoe Lake, Madison County which are the bluff watersheds that encompass Collinsville, Maryville, and Glen Carbon. It provides a description of the physical, hydrologic, and socio-cultural characteristics of the upland watersheds. Soil losses for existing and future land uses are assessed. Sediment delivery rates are estimated, and the quantity of sediment delivered to the base of the bluffs is calculated.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: CONSERVATION AND PRESERVATION OF HORSESHOE LAKE (PHASE II) (TASK I)

OUTPUT TITLE: Conservation and Preservation of Horseshoe Lake: Phase II (Report SWIL -- MAPC 81-16, September 1981)

ABSTRACT: This report documents plans to curb erosion and sedimentation from the upland watersheds which drain into Cahokia Canal and Horseshoe Lake. Implementation tools available to designated management agencies to control erosion from construction sites and agricultural land are discussed, and recommendations are made for program execution.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part J

Water Quality Standards Review Program

208 PLANNING IN ILLINOIS

Part J

Water Quality Standards Review Program

Projects of the Greater Egypt Regional Planning
and Development Commission

PROJECT TITLE: INVENTORY OF EXISTING STREAM USES AND FACTORS WHICH AFFECT STREAM USE CLASSIFICATION (TASK III)

OUTPUT TITLE: Stream Use in Southern Illinois

ABSTRACT: The report identifies and locates 97 stream reaches in the 10 county Southern Illinois 208 area. Use of these stream reaches by the public is documented together with stream uses the public desire in the future. Standard stream use categories developed by Illinois Environmental Protection Agency are used. Report data was transmitted t IEPA for agency use in recommending new water quality standards for Illinois streams to the Illinois Pollution Control Board.

PLANNING AGENCY: GERP&DC
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part J

Water Quality Standards Review Program

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK A: IMPLEMENTATION OF WATER QUALITY MANAGEMENT INFORMATION SYSTEM (TASK IXA)

OUTPUT TITLE: Annual Report Illinois Water Quality management Information System (September 1979)

ABSTRACT: The report summarized the progress toward developing the Water Quality Management Information System for the state of Illinois during FY 1978-1979. Areas discussed are: Software Development; Incorporating BOD/DO, pH and Temperature Modeling; Computer Instruction Manual; Efficiency Refinements to Software; the Upper Sangamon Analysis; Nonpoint Source and Geochemical Background Identification and Quantification; Statistical Analysis of Land Use - Water Quality Effects; completion of the Upper Sangamon Study, and LANDSAT Imagery Analysis.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES LANDSAT COVER DATA. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS (TASK IXA)

OUTPUT TITLE: Land Cover Data

ABSTRACT: The output was a computer printout which summarizes land use data in the Fox River Basin, Kankakee River Basin, Kaskaskia River Basin, Sangamon River Basin, Galesburg Plain Basin, and the Rock River Basin.

Parameters delineated were: percent water, forest, row crop, non row crop, other agriculture, pasture, urban and other.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS and ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS GENERAL PROJECT ACTIVITIES (TASK IXA)

OUTPUT TITLE: Annual Report Illinois Water Quality Management Information System. Biological Component (September 1979)

ABSTRACT: The Biological Component of the Water Quality Management Information System (WQMIS) has been developed to supplement ongoing water quality evaluation and modeling. The initial activity included consultation with Phil Smith for a listing of all known Illinois fishes, and then the development of a data matrix. This data matrix was constructed from both subjective and objective data and included distributional data and environmental (habitat and water quality) requirements. The data were organized to integrate fisheries data into the existing stream segment breakdown used for water quality evaluation. The data in this matrix provide an easily searched data set. Six regions follow Smith (1973) and stream order preference of each species is listed. After the initial search steps specifying region and stream order, additional data are provided on habitat requirements (substrate, current velocity), water quality (suspended solids tolerance, dissolved oxygen requirements, and specific element or compound toxicity), and spawning requirements (following habitat and water quality requirements already listed). Use of this matrix provides a reasonably complete profile of the environmental requirements of each fish.

A second data base development included integration of the existing Illinois Natural History Survey fish data with the matrix. These data were again organized in the stream segment breakdown. All sampling locations within a segment were pooled to provide a record of fish actually present at any location. The manipulation of these data was designed to provide a verification of matrix output, and a method of evaluating station or area conditions by comparing those fish which should occur in any segment with those which as a matter of record do occur. This comparison provides the initial information for standards decision making. An evaluation can be made of stream condition (e.g. actual fisheries similar or dissimilar to expected fisheries).

The result of these initial developments was generation of a format which allows integration of biological information with watershed condition and water quality through an aquatic life matrix to improve the water quality standards setting process.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS OF THE WQMIS (TASK IXA)

OUTPUT TITLE: Analysis of Water Quality Standards: Upper Sangamon Basin, Illinois (March 1980)

ABSTRACT: The purpose of this report was to provide an overview of the chemical water quality of the Upper Sangamon River Basin. It focuses on the character of water quality relative to water quality standards, as well as on the merits of those standards in maintaining high quality water for various uses.

The major body of this report consists of a parameter-by-parameter analysis of 28 water quality constituents plus total suspended solids for which there presently exist standards promulgated by the Illinois Pollution Control Board. Analysis for each parameter consists of five parts: (1) evaluation of available water quality data and conditions of water quality within the Upper Sangamon Basin; (2) evaluation of the record of compliance, not only to Illinois standards, but also to standards which have been either recommended or proposed by the U.S. Environmental Protection Agency; (3) evaluation of the contributions to pollution made by point source dischargers within the basin; (4) evaluation of the contributions made by non-point source activities and background processes; and (5) evaluation of both current and proposed standards against two major yardsticks: whether the standards are appropriate for environmental protection, and whether the ability exists to maintain waters in compliance with the standards. Where appropriate, there is also discussion of best management practices.

Compliance with Illinois General Use Standards in the Upper Sangamon Basin is generally good. Only three (copper, iron, and phosphorus) of 26 regulated constituents have experienced significant numbers of observations in excess of their standards. Assuming that fecal coliform bacteria can be evaluated against a simple standard of 200 per 100 ml, it also has a poor record of compliance.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS GENERAL PROJECT ACTIVITIES (TASK IXA)

OUTPUT TITLE: Analysis of Water Quality Rock River Basin in Illinois (September 1980)

ABSTRACT: The purpose of this report was to provide an overview of the chemical water quality of the streams of the Rock River Basin in Illinois.

The major body of this report consists of a parameter-by-parameter analysis of 28 water quality constituents plus total suspended solids for which there presently exist standards promulgated by the Illinois Pollution Control Board. Analysis for each parameter consists of six parts: (1) evaluation of available water quality data and conditions of water quality within the Rock River Basin; (2) evaluation of the record of compliance, not only to Illinois standards, but also to standards which have been either recommended or proposed by the U.S. Environmental Protection Agency; (3) evaluation of the contributions to pollution made by point source dischargers within the basin; (4) evaluation of the contributions made by non-point source activities; (5) evaluation of contributions made by background processes of geochemical and biological character; and (6) consideration of whether the ability exists to maintain waters in compliance with the standards.

Compliance with Illinois General Use Standards in the Rock River Basin is generally good. Twelve of the 26 regulated parameters have experienced no violations, and only four (ammonia nitrogen, copper, iron, and lead) have experienced significant number of observations in excess of standards. Assuming that fecal coliform bacteria can be evaluated against a simple standard of 200 per 100 ml, it also has a poor record of compliance.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS GENERAL PROJECT ACTIVITIES (TASK IXA)

OUTPUT TITLE: Analysis of Water Quality in the Galesburg Plain (McKee Creek, LaMoine River, Sugar Creek, Spoon River, and Kickapoo Creek), Illinois (October 1980)

ABSTRACT: The purpose of this report was to provide an overview of the chemical water quality of the streams of the Galesburg Plain. This is the third in a series of similar reports.

The major body of this report consists of a parameter-by-parameter analysis of 28 water quality constituents plus total suspended solids for which there presently exist standards promulgated by the Illinois Pollution Control Board. Analysis for each parameter consists of six parts: (1) evaluation of available water quality data and conditions of water quaity within the Galesburg Plain; (2) evaluation of the record of compliance to current Illinois standards and to standards which have been recommended by the U.S. Environmental Protection Agency; (3) evaluation of the contributions to pollution made by point source dischargers within the basin; (4) evaluation of the contributions made by non-point source activities; (5) evaluation of contributions made by background processes and geochemical and biological character; and (6) consideration of whether the ability exists to maintain waters in compliance with the standards.

Compliance with Illinois General Use Standards in the Galesburg Plain is generally good. Eleven of the 26 regulated parameters have experienced no violations, and only six (ammonia nitrogen, copper, iron, manganese, lead, and sulfate) have experienced significant numbers of observations in excess of standards. Assuming that fecal coliform bacteria can be evaluated against a simple standard of 200 per 100 ml, it also has a poor record of compliance.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS GENERAL PROJECT ACTIVITIES (TASK IXA)

OUTPUT TITLE: Analysis of Water Quality: Lower Sangamon River Basin, Illinois (November 1980)

ABSTRACT: The purpose of this report was to provide an overview of the chemical water quality of the streams of the Lower Sangamon Basin. This is the fourth in a series of similar reports.

The major body of this report consists of a parameter-by-parameter analysis of 28 water quality constituents plus total suspended solids for which there presently exist standards promulgated by the Illinois Pollution Control Board. Analysis for each parameter cnsists of six parts: (1) evaluation of available water quality data and conditions of water quality within the Lower Sangamon Basin; (2) evaluation of the record of compliance to current Illinois standards and to standards which have been recommended by the U.S. Environmental Protection Agency; (3) evaluation of the contributions to pollution made by point source dischargers within the basin; (4) evaluation of the contributions made by non-point source activities; (5) evaluation of the contributions made by background processes of geochemical and biological character; and (6) consideration of whether the ability exists to maintain waters in compliance with the standards.

Water quality in the Lower Sangamon Basin is generally fair to good. As measured against the Illinois General Use Standards, eight of the 26 regulated parameters have experienced no violations, and eight others have experienced violations at rates of 1% or less. Only four parameters (ammonia nitrogen, dissolved oxygen, copper, and iron) have experienced violations in 5% or more of samples. Given that fecal coliform bacteria can be evaluated against a simple standard of 200 per 100 ml, it also has a poor record of compliance.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS GENERAL PROJECT ACTIVITIES (TASK IXA)

OUTPUT TITLE: Analysis of Water Quality: Upper Kaskaskia River Basin, Illinois (December 1980)

ABSTRACT: The purpose of this report was to provide an overview of the chemical water quality of the streams of the Upper Kaskaskia Basin. This is the fourth in a series of similar reports.

The major body of this report consists of a parameter-by-parameter analysis of 28 water quality constituents plus total suspended solids for which there presently exist standards promulgated by the Illinois Pollution Control Board. Analysis for each parameter consists of six parts: (1) evaluation of available water quality data and conditions of water quality within the Upper Kaskaskia Basin; (2) evaluation of the record of compliance to current Illinois standards and to standards which have been recommended by the U.S. Environmental Protection Agency; (3) evaluation of the contributions to pollution made by point source dischargers within the basin; (4) evaluation of the contributions made by non-point source activities; (5) evaluation of the contributions made by background processes of geochemical and biological character; and (6) consideration of whether the ability exists to maintain waters in compliance with the standards.

Water quality in the Upper Kaskaskia Basin is generally good. As measured against the Illinois General Use Standards, ten of the 26 regulated parameters have experienced no violations, and six others have experienced violations at rates of 1% or less. Only three parameters (copper, iron, and manganese) have experienced violations in excess of 5% of samples. Given that fecal coliform bacteria can be evaluated against a simple standard of 200 per 100 ml, it also has a poor record of compliance.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS GENERAL PROJECT ACTIVITIES (TASK IXA)

OUTPUT TITLE: Analysis of Water Quality: Lower Kaskaskia River Basin, Illinois (February 1981)

ABSTRACT: The purpose of this report was to provide an overview of the chemical water quality of the streams of the Lower Kaskaskia Basin. This is the sixth in a series of similar reports.

The major body of this report consists of a parameter-by-parameter analysis of 28 water quality constituents plus total suspended solids for which there presently exist standards promulgated by the Illinois Pollution Control Board. Analysis for each parameter consists of six parts: 1) evaluation of available water quality data and conditions of water quality within the Lower Kaskaskia Basin; 2) evaluation of the record of compliance to current Illinois standards and to standards which have been recommended by the U.S. Environmental Protection Agency; 3) evaluation of the contributions to pollution made by point source dischargers within the basin; 4) evaluation of the contributions made by non-point source activities; 5) evaluation of contributions made by background processes of geochemical and biological character; and 6) consideration of whether the ability exists to maintain waters in compliance with the standards.

Water quality in the Lower Kaskaskia Basin is generally fair to good. As measured against the Illinois General Use Standards, eight of the 26 regulated parameters have experienced no violations, and five others have experienced violations at rates of 1% or less. Only five parameters (ammonia nitrogen, copper, dissolved oxygen, iron, and manganese) have experienced violations in excess of 5% of samples. Given that fecal coliform bacteria can be evaluated against a simple standard of 200 per 100 ml, it also has a poor record of compliance.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS GENERAL PROJECT ACTIVITIES (TASK IXA)

OUTPUT TITLE: Analysis of Water Quality: Big Muddy River Basin, Illinois (April 1981)

ABSTRACT: The purpose of this report was to provide an overview of the chemical water quality of the streams of the Big Muddy River Basin. This is the seventh in a series of similar reports.

The major body of this report consists of a parameter-by-parameter analysis of 28 water quality constituents plus total suspended solids for which there presently exist standards promulgated by the Illinois Pollution Control Board. Analysis for each parameter consists of six parts: (1) evaluation of available water quality data and conditions of water quality within the Big Muddy Basin; (2) evaluation of the record of compliance to current Illinois standards and to standards which have been recommended by the U.S. Environmental Protection Agency; (3) evaluation of the contributions to pollution made by point source dischargers within the basin; (4) evaluation of the contributions made by non-point source activities; (5) evaluation of contributions made by background processes of geochemical and biological character; and (6) consideration of whether the ability exists to maintain waters in compliance with the standards.

Water quality in the Big Muddy Basin varies from fair to good. Differences in the degree of compliance to water quality standards is reflective of the many variations in land use conditions, point source loadings, non-point source loadings, and background contributions which characterize the basin.

As measured against the Illinois General Use Standards, five of the 26 regulated parameters have experienced no violations, and six others have experienced violations at rates of 1% or less. However, six parameters (ammonia nitrogen, copper, dissolved oxygen, iron, manganese, and sulfate) have experienced violations in excess of 5% of samples. Given that fecal coliform bacteria can be evaluated against a simple standard of 200 per 100 ml, it also has a high violation rate.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS GENERAL PROJECT ACTIVITIES (TASK IXA)

OUTPUT TITLE: Analysis of Water Quality: Kankakee River Basin, Illinois (June 1981)

ABSTRACT: The purpose of this report was to provide an overview of the chemical water quality of the streams of the Kankakee River Basin in Illinois. This is the eighth in a series of similar reports.

The major body of this report consists of a parameter-by-parameter analysis of 28 water quality constituents plus total suspended solids for which there presently exist standards promulgated by the Illinois Pollution Control Board. Analysis for each parameter consists of six parts: (1) evaluation of available water quality data and conditions of water quality within the Kankakee Basin; (2) evaluation of the record of compliance to current Illinois standards and to standards which have been recommended by the U.S. Environmental Protection Agency; (3) evaluation of the contributions to pollution made by point source dischargers within the basin; (4) evaluation of the contributions made by background processes of geochemical and biological character; and (6) consideration of whether the ability exists to maintain waters in compliance with the standards.

Quality of water in the Kankakee River Basin is among the highest which exists within Illinois, as measured against the Illinois General Use Standards.

Sixteen of the 26 parameters regulated under General Use Standards have no recorded violations, and four others have experienced recorded violations at rates of 1% or less.

The remaining six General Use parameters (copper, dissolved oxygen, iron, fecal coliform, bacteria, lead, and phosphorus) have reported overall violation rates of 4% or greater. However, these rates are not necessarily all reflective of impaired water quality.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS GENERAL PROJECT ACTIVITIES (TASK IXA)

OUTPUT TITLE: Analysis of Water Quality: Kishwaukee River Basin, Illinois (July 1981)

ABSTRACT: The purpose of this report was to provide an overview of the chemical water quality of the streams in the Kishwaukee River Basin in Illinois. This is the ninth in a series of similar reports.

The major body of this report consists of a parameter-by-parameter analysis of 28 water quality constituents plus total suspended solids for which there presently exist standards promulgated by the Illinois Pollution Control Board. Analysis for each parameter consists of six parts: (1) evaluation of available water quality data and conditions of water quality within the Kishwaukee Basin; (2) evaluation of the record of compliance to current Illinois standards and to standards which have been recommended by the U.S. Environmental Protection Agency; (3) evaluation of the contributions to pollution made by point source dischargers within the basin; (4) evaluation of the contributions made by non-point source activities; (5) evaluation of contributions made by background processes of geochemical and biological character; and (6) consideration of whether the ability exists to maintain waters in compliance with the standards.

Quality of water in the Kishwaukee River Basin is among the highest which exists within Illinois, as measured against the Illinois General Use Standards.

Eighteen of the 26 parameters regulated under General Use Standards have no recorded violations, and three others have experienced recorded violations at rates of 2% or less.

The remaining five General Use parameters (copper, iron, fecal coliform bacteria, lead, and phosphorus) have reported overall violation rates of 5% or greater. However, these rates are not necessarily all reflective of impaired water quality.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK D: EVALUATION OF TRIAL RUNS ON THE WQMIS GENERAL PROJECT ACTIVITIES (TASK IXA)

OUTPUT TITLE: Analysis of Water Quality: Little Wabash River Basin, Illinois (September 1981)

ABSTRACT: The purpose of this report was to provide an overview of the chemical water quality of the streams of the Little Wabash River Basin in Illinois. This is the tenth in a series of similar reports.

The major body of this report consists of a parameter-by-parameter analysis of 28 water quality constituents plus total suspended solids for which there presently exist standards promulgated by the Illinois Pollution Control Board. Analysis for each parameter consists of six parts: (1) evaluation of available water quality data and conditions of water quality within the Little Wabash Basin; (2) evaluation of the record of compliance to current Illinois standards and to standards which have been recommended by the U.S. Environmental Protection Agency; (3) evaluation of the contributions to pollution made by point source dischargers within the basin; (4) evaluation of the contributions made by non-point source activities; (5) evaluation of contributions made by background processes of geochemical and biological character; and (6) consideration of whether the ability exists to maintain waters in compliance with the standards.

Water quality in the Little Wabash Basin varies from fair to good. Differences in the degree of compliance to water quality standards are reflective of variations in land use conditions, point source loadings, non-point source loadings, and background contributions which characterize the basin.

As measured against the Illinois General Use Standards, eleven of the 26 regulated parameters have experienced no violations, and eight others have experienced violations at rates of 2% or less. However, four parameters (copper, dissolved oxygen, iron, and manganese) have experienced violations in excess of 10% of samples. Given that fecal coliform bacteria can be evaluated against a simple standard of 200 per 100 ml, it also has a high violation rate.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Final Report 1980 Illinois Water Quality management Information System Biological Component - Fisheries (June 1981).

ABSTRACT: The report provided a detailed review of the development of the biological component of the WQMIS. To acquaint the reader with the structure of the interactive computer based analysis package, the report illustrates a typical system use and identifies the major components of the system. Detailed discussions are provided which review the physical parameter calculations, water quality and fisheries data, and suitability curve development.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component - Fisheries, DesPlaines River Basin (June 1981)

ABSTRACT: This report has been prepared to review the data fisheries available for the DesPlaines Basin used in the WQMIS. The results of basin-specific analysis are presented and general water quality and fisheries conditions reviewed. The report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network station, these data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for the period of record. Comparisons of current conditions are made to state and federal standards to determine the possibilities of site-specific and basin wide water quality suitability modification based on ambient conditions.

Because the data base is limited it is difficult to determine actual basin conditions. It appears that the basin is subject to significant impact from high violations of water quality standards. This observation is supported by the condition of both invertebrate and fisheries communities. It is recommended that the DesPlaines basin receive more comprehensive sampling to identify sources of impacts.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component-Fisheries, Fox River Basin (June 1981).

ABSTRACT: This report has been prepared to review the fisheries data available for the Fox River Basin used in the WQMIS. The results of basin specific analysis are presented and general water quality and fisheries conditions reviewed. The report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data are available, for locations at or near a water quality network station, these data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for the period of record. Comparisons of current conditions are made to state and federal standards to determine the possibilities of site-specific and basin wide water quality suitability modification based on ambient conditions.

The data base in the Fox River basin is limited, but a review of the data available indicates conditions are generally good. The invertebrate community shows some variability, but fisheries were consistently in good condition. Continued monitoring of the basin is recommended, particularly those stations which can provide corresponding fisheries and invertebrate data.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component - Fisheries, Mississippi, Illinois, Wabash, and Ohio River Basins (June 1981)

ABSTRACT:

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component - Fisheries, Vermillion River Basin (Wabash River Tributary) (June 1981).

ABSTRACT: This report has been prepared to review the fisheries data available for the Vermilion River Basin (Wabash River) used in the WQMIS. The results of basin specific analysis are presented and general water quality and fisheries conditions reviewed. The report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network station, these data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for the period of record. Comparisons of current conditions are made to state and federal standards to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

From the limited data base it appears that invertebrate conditions (based on station BP 01) are relatively good. The greatest frequency of violation was for iron with the maximum copper violation rate of 40%. Conditions in the basin can be judged not critical, but fisheries collections should be made to correlate with water quality and invertebrate information.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component - Fisheries, Vermillion River Basin (Illinois River Tributary) (June 1981)

ABSTRACT: This report has been prepared to review the fisheries data available for the Vermilion River Basin (Illinois River) used in the WQMIS. The results of basin-specific analysis are presented and general water quality and fisheries conditions reviewed. The report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network station, these data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for the period of record. Comparisons on current conditions are made to state and federal standards to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

Typically, sport fish and non-tolerant species were present in high numbers and the overall fisheries diversity was good. Because the data base is largely non-correlative and very limited no comments will be made concerning apparent basin condition. It is recommended that more recent fisheries and invertebrate data be collected for the basin to assess basin condition.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component - Fisheries, LaMoine River Basin (June 1981).

ABSTRACT: This report has been prepared to review the fisheries data available for the LaMoine River Basin used in the WQMIS. The results of basin-specific analysis are presented and general water quality and fisheries conditions reviewed. This report is structured to first present the fisheries data used to generate a basin fisheries summary and the short lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network station, these data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for the period of record. Comparisons on current conditions are made to state and federal standards to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

It is not possible to draw conclusions concerning the relative condition of the entire basin because of the limited data base. If conditions at the mouth are indicative of general conditions there appears to be no major degradation in the basin even though consistent violations of copper and iron standards occurred.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Water Quality Management Information System Biological Component - Fisheries, Sangamon River Basin (July 1981)

ABSTRACT: This report has been prepared to review the data available for the Sangamon Basin used in the WQMIS. The results of basin specific analysis are presented and general water quality and fisheries conditions reviewed. The report presents the fisheries data used to generate a basin fisheries summary and the short lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network station, those data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The anlaysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling for the period of record. A final review is then made to determine the potential for site specific and basin-wide modification of general water quality suitability relationships. Comparisons on current conditions are also made to state standards and federal criteria to determine the possibilities of suitability modification based on ambient conditions.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biologial Component - Fisheries Spoon River Basin (June 1981).

ABSTRACT: This report has been prepared to review the fisheries data available for the Spoon River Basin used in the WQMIS. The results of basin-specific analysis are presented and general water quality and fisheries conditions reviewed. The report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network stations, these data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for the period of record. Comparisons on current conditions are made to state and federal standards to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

The fisheries of the Spoon River basin can be generally assessed as fair. Tolerant species such as golden redhorse and carp dominated fisheries collections with few sport or non-tolerant fish represented in the collections. Because the fisheries were judged degraded no support for suitability modification was found.

Although several quantitative, high quality fisheries collections existed for the Spoon River basin samples were generally small and sampling effort somewhat limited. Because of the generally poor fisheries condition noted the Spoon River should be singled out for more intensive study in the near future.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component - Fisheries, Big Muddy River Basin (June 1981)

ABSTRACT: This report has been prepared to review the fisheries data available for the Big Muddy Basin used in the WQMIS. The results of basin specific analysis will be presented and general water quality and fisheries conditions reviewed. This report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network station, these data are available for locations at or near a water quality network station, those data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for a period of record. Comparisons of current conditions are made to state standards and federal criteria to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

Aquatic life assessments indicate unbalanced invertebrate communities and fair to good fisheries indicating that aquatic life is not severely degraded at the stations sampled. This analysis is limited to the basin below Rend Lake for which data are available. Since aquatic life was not severely degraded a recommendation was made for alteration of the basin suitability for iron to 2.0 mg/l. This is significantly higher than the recommendation made for other basins in the state.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component-Fisheries, Kaskaskia River Basin (June, 1981)

ABSTRACT: This report has been prepared to review the fisheries data available for the Kaskaskia Basin used in the WQMIS. The results of basin specific analysis will be presented and general water quality and fisheries conditions reviewed. This report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network station, these data are presented and reviewed in detail to determine the condition (relative health or observed pollution influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling and summaries of all samples collected during the month and season of sampling for a period of record. Comparisons on current conditions are made to state standards and federal criteria to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

A review of Kaskaskia River fisheries based on basin species lists and quantitative fisheries data indicates biological conditions in the Kaskaskia are good.

Of the basins reviewed as part of the WQMIS, this basin has the best fisheries data resource. This is further supported by invertebrate analyses which indicate generally good (balanced or unbalanced community structure) for the stations sampled in the basin. The only regular violations of water quality stadards occurred for iron and copper although summary statistics indicated several other parameters periodically exceeded standard levels. Considering fisheries conditions and associated water quality it is possible to recommend modification of suitability relationships for iron at stations 0.07 and 0.10 to reflect a suitability of one at a concentration of 1.2 mg/l. No modifications of other parameters are recommended.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component - Fisheries, Rock River Basin (June 1981).

ABSTRACT: This report has been prepared to review the data available for the Rock River Basin used in the WQMIS. The results of basin specific analysis will be presented and general water quality and fisheries conditions reviewed. This report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network station, these data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for a period of record. Comparisons on current conditions are made to state standards and federal criteria to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

In general the condition of basin fisheries was good. The review of basin species lists indicated no significant change between pre and post-1965 collections although the number of species in the post-1965 collections was somewhat higher. The fisheries samples from the Pecatonica River indicated good fisheries, the samples from the main stem of the Rock River indicated somewhat degraded (generally assessed as fair) fisheries. Support in the data was provided for modification of the suitability relationship for iron to 1.1 mg/l for station PW 05 as well as the basin. The primary support for this modification was provided in the Pecatonica River. The only other parameter with significant violation rates was copper, but no modification was made of suitability relationships because of a recognized analytical problem, and the poorer quality of fisheries at the stations involved.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component - Fisheries, Mackinaw River Basin (June 1981)

ABSTRACT: This report has been prepared to review the fisheries data available for the Mackinaw River Basin used in the WQMIS. The results of basin-specific analysis are presented and general water quality and fisheries conditions reviewed. The report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data is available for locations at or near a water quality network station, that data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for the period of record. Comparisons on current conditions are made to state and federal standards to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

A general basin analysis of fisheries condition indicates aquatic life would be rated good to fair reflecting some degradation of fisheries are present. Since only one recent fisheries collection was available and that near the mouth of the basin the trend in fisheries cannot be strongly supported. The degradation in fisheries quality is of concern.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGREDATION POLICY ALTERNATIVES. SUBTASK E: INTEGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component -- Fisheries Embarrass River Basin (June 1981)

ABSTRACT: This report has been prepared to review the fisheries data available for the Embarrass River Basin used in the WQMIS. The results of basin specific analysis will be presented and general water quality and fisheries conditions reviewed. This report presents the fisheries data used to generate a basin fisheries summary and the short lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network station, those data are presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for a period of record. Comparisons on current conditions are made to state standards and federal criteria to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

Fisheries in the Embarrass River Basin were rated fair to good to excellent, the quality of the fisheries in each reach reflecting the water quality of the reach.

Reach-specific suitability modifications have been suggested for copper and iron.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY 78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component-Fisheries, Little Wabash River Basin (June 1981)

ABSTRACT: This report has been prepared to review the fisheries data available for the Little Wabash River Basin used in the WQMIS. The results of basin specific analysis will be presented and general water quality and fisheries conditions reviewed. This report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data are available for locations at or near a water quality network station, that data is presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for the period of record. Comparisons on current conditions are made to state and federal standards to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

The quality of the aquatic life in the Little Wabash Basin is generally good. Water quality was variable throughout the basin with consistent violations of iron, copper, and manganese standards. Based on the review of suitability relationships several modifications to reach-specific suitability values was recommended. In addition, because of consistent violation of copper and iron standards modification of suitability values based on those standards is recommended for the entire basin. The suggested suitability for iron is 1.2 mg/l and for copper 0.03 mg/l. No other basin wide modifications are recommended.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IXA)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component - Fisheries, Kankakee River Basin (June 1981)

ABSTRACT: This report has been prepared to review the fisheries data available for the Kankakee River Basin used in the WQMIS. The results of basin specific analysis will be presented and general water quality and fisheries conditions reviewed. This report presents the fisheries data used to generate a basin fisheries summary and the species lists for each watershed area category. Where high quality, quantitative fisheries data is available for locations at or near a water quality network station, that data is presented and reviewed in detail to determine the condition (relative health or observed pollutional influence) present at the station on the date of collection. The analysis of fisheries is followed by an analysis of water quality conditions on or near the date of fisheries sampling and summaries of all samples collected during the month and season of sampling for the period of record. Comparisons on the current conditions are also made to state and federal standards to determine the possibilities of site-specific and basin-wide water quality suitability modification based on ambient conditions.

The review of basin conditions indicated aquatic life was present in generally good condition and water quality was also good. Violations were noted for several parameters, but the only consistent violations were observed for iron and copper. The review of suitabilities for these parameters indicated no modification of either reach specific or basin specific suitability values was warranted for copper. Iron suitabilities were modified.

The fisheries data base in the Kankakee Basin is reasonably good, but corelative water quality information was not available for recent samples. Coordinated fisheries collections and water quality sampling is recommended.

This report was written to assist the Water Quality Management Information System BC-F User. The data available within the System is discussed and elements of the BC-F reviewed. In addition, User's Guides on the following topics are included: Fisheries Matrix Use, Species Association Tables and Use, Joint Toxicity Evaluation and how to use the data management on the storage and manipulation of fishery data.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONCEPTUAL STUDY OF WATER QUALITY STANDARDS AND ANTIDEGRADATION POLICY ALTERNATIVES. SUBTASK E: INTERGRATION OF THE BIOLOGICAL COMPONENT INTO THE WQMIS (TASK IX A)

OUTPUT TITLE: Illinois Water Quality Management Information System Biological Component - Fisheries - User Manual (June, 1981)

ABSTRACT: The biological component of the Water Quality Management Information System was developed with an emphasis on fisheries (BC-F) and established the relationship between water quality and maintenance or fisheries as a designated stream use.

This report was written to assist the Water Quality Management Information System BC-F user. The data available within the system is discussed and elements of the BC-F reviewed. In addition a user's guide on the following topics are included: Fisheries Matrix Use, Species Association Tables and Use and Joint Toxicity Evaluation and how to use the data management or the storage and manipulation of fishery data.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: INVENTORY OF EXISTING FEDERAL, STATE AND LOCAL REGULATORY PROGRAMS (TASK IXB)

OUTPUT TITLE: Inventory of Existing Federal, State and Local Regulatory Programs. Draft.

ABSTRACT: This report presents the various Federal, State and local programs and authorities related to Water Quality Management. There are fourteen major subject areas. These are:

Planning/Coordination
Domestic Wastewater Treatment
Urban Stormwater
Combined Sewer Systems
Septic Systems
Agriculture

1. General Agriculture
2. Soil Erosion
3. Livestock
4. Fertilizers
5. Pesticides
6. Forestry
7. Fruit Production

Disposal of Sludge and Other Residual Waste
Toxic and Hazardous Materials
Construction
Mining
Hydrologic Modifications
Flood Control
Water Supply
Unique Resource Preservation/Recreation

The second portion of the report contains the results of a survey sent to all 83 non-designated counties and municipalities over 10,000 people in population. Selected municipalities with populations under 10,000 were also surveyed. Six basic types of regulations were examined: subdivision regulations, building codes, zoning ordinances, flood plain ordinances, drainage/soil erosion regulations and detention ordinances, and septic codes.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: TOXICITY AND AQUATIC LIFE IMPACTS OF SIGNIFICANT INDUSTRIAL DISCHARGES (TASK IXF)

OUTPUT TITLE: Development of an Instream Monitor for Persistent Pollutants (August 1981)

ABSTRACT: The purpose of this study was to assess the use of the freshwater clam, *Corbicula manilensis* as a monitor for the presence of toxicants in Illinois streams and rivers, especially potential public water supplies. Three topics investigated were: the accumulation of persistent chlorinated hydrocarbon pesticides in clam fat, the activity of certain detoxifying enzymes in clam tissues, and the accumulation of promutagins in *Corbicula sp*.

The clams were removed from Lake Sangchris, depurated in the laboratory and then implanted in cages in the Kaskaskia River near Tuscola, Illinois. Implanted clams were removed over a period of 72 days and their pesticide concentration evaluated. Laboratory studies of particular enzymes related to potential detoxification mechanisms in the clam and exploratory assay of clam extracts for mutagencity are also reported.

The results indicate that *Corbicula manilensis* bioaccumulate several persistent chlorinated hydrocarbon pesticides many thousand-fold above their concentrations in water. Therefore, the assay of *Corbicula* or pesticides may be a useful indicator of the presence of such compounds in rivers and lakes. *Corbicula* has been shown to possess a glucose-6-phosphate dehydrogenase activity that is apparently suitable for the generation of NADPH from NADP; G-6-P and O_2 in typical Ames assay. However, no evidence of the activation of promutagens by *Corbicula* extracts has been obtained in these preliminary studies and it is not yet known if *Corbicula* can produce relevant mixed function oxidases. Initial efforts to detect the accumulation of promutagens by *Corbicula* were unsuccessful.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: TOXICITY AND AQUATIC LIFE IMPACTS OF SIGNIFICANT INDUSTRIAL DISCHARGES SUBTASK A (TASK IXF)

OUTPUT TITLE: Identification of Organic Pollutants and Mutagens in Industrial and Municipal Effluents (October 1981)

ABSTRACT: The purpose of this project was to develop a methodology for extraction and identification of organic substances contained in municipal and industrial effluents. Organic chemicals were extracted from the effluent by several different procedures of absorption chromatography. The chemicals were identified by gas chromatography, mass spectrometry and were assayed for mutagenic activity by the Ames Bacterial Assays.

Some of the principal conclusions of this study are:

1. All effluents showed significant mutagenicity and mutagenicity sometimes appeared to be due to more than one compound.

2. The different extraction fractions showed different patterns of mutagenicity.

3. Comparison of the mutagenicity of different fractions with the total organic carbon content of these fractions gave variable results.

4. A total of 238 compounds were identified in this study and included 20 EPA Priority Pollutants. Forty-four of those compounds have not been previously reported as constituents of natural water or wastewater.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: COMPUTER CAPABILITY FOR ASSESSMENT OF CONTROL STRATEGIES (TASK IXE)

OUTPUT TITLE: No Report

ABSTRACT: This project funded the Aquisition of the Tektronix 4054 terminal and accessory equipment.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: DEVELOPMENT OF A METHODOLOGY FOR ECOLOGICAL MANAGEMENT OF INTERMITTENT STREAMS (TASK IXG)

OUTPUT TITLE: Ecological Comparison of Intermittent Streams in Different Land Use Patterns in Northeast Illinois

ABSTRACT: This study focused on a general approach and methodology needed to assess the importance of intermittent streams. The study emphasized the biological community, primarily benthic invertebrates, of five different land-use watersheds during high and low periods of flow. Various physical and chemical characteristics of the streams in support of the biological community were also considered. After the data were collected for a range of flow conditions, statistical relationships between invertebrate populations and physical and chemical characteristics, especially flow, dissolved oxygen, and temperature were sought. In addition, a comparison of intermittent streams in different land-use watersheds was made to show distinct differences between semi-natural systems and systems with various degrees of human pressure, i.e., from domestic to industrial interference. Differences between streams and among stream stations and between riffle and pool areas were sought using statistical tests for certain biological data.

A summary diagram, outling the major ecosystem components of an intermittent stream, considered in this study is included in the report.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY 78

PROJECT TITLE: PUBLIC IMPACT ON STREAM USE DESIGNATION (TASK IA)

OUTPUT TITLE: Public Impact on Water Use (September 1981)

ABSTRACT: The intent of this inventory was to make information on the needs and uses of surface water resources more accessible for IEPA's water quality standards reviews.

A variety of government agencies have information about public and private water use. The form, accessibility and validity of the data is variable. This project reports what water use information is available and how it is compiled, stored, maintained and accessed.

The information sources compiled are organized by water use type. Instream uses are identified as: (1) Swimming and wading, (2) Fishing, recreational, (3) Fishing, commercial, (4) Boating, high power, (5) Boating, low power, (6) Boating, no power, (7) Water transportation. Offstream uses include: (1) Altruistic uses, (2) Drainage, (3) Power Generation, (4) Waste Assimilation, (5) Water supply, domestic, (6) Water supply, industrial, (7) Riparian land uses, expecially in the floodway. Material which contains information about the Sangamon River Basin was enclosed, as an example of available data. If the sample was less than three pages, it was included in the report following the inventory form that documents that source. If the example consisted of more than 3 pages of material, it was appended to this report and referenced on the inventory form.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: INVENTORY OF EXISTING AND POTENTIAL LEGITIMATE STREAM USES (TASK IB)

OUTPUT TITLE: Updating to 1980 the 1968 Hydraulic Geometry Equations for the Sangamon River Basin in Illinois (September 1980)

ABSTRACT: In 1968 a set of 5 hydraulic geometry equations were published for each of 18 river basins in Illinois. These equations enable calculation of stream flow, velocity, width and depth for any flow frequency, F, and drainage area, Ad. These 1968 equations were based on 15 years of flow data at stream gaging stations.

This report updates the 1968 equations for the Sangamon River Basin using 30 years of flow data instead of 15 years. It is concluded that: (1) hydraulic conditions at the stream gages have not changed significantly during the past 30 years, (2) calculating the hydraulic equation with 30 years of data as opposed to 15 years of data provides a slightly improved sample of flow variability, and (3) the 1968 equations for all river basins are consistent and valid for general use.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: INVENTORY OF EXISTING AND POTENTIAL LEGITIMATE STREAM USES (TASK IB)

OUTPUT TITLE: Potential Legitimate Stream Uses (October 1981)

ABSTRACT: Hydraulic Geometry Equations were solved for Illinois river basins at the 90%, 50% and 10% flow durations. Ten sets of basin maps were produced depicting the average depth in feet for all Illinois streams at the 50% and 10% flow durations. The maps delineate stream segments in the following depth categories for both flow durations: 0-.5 feet, .5-2 feet, 2-3.5 feet and greater than 3.5 feet.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: STANDARDS DEVELOPMENT FOR INTERMITTENT STREAMS (TASK IC)

OUTPUT TITLE: Investigation of Six Intermittent Streams (September 1980)

ABSTRACT: Intermittent streams pose special management problems because: (1) a large percentage of wastewater treatment facilities in Illinois discharge to these streams and a proportionately large share of pollution abatement resources are expended on those facilities; and (2) the complex ecological relationships of the State's intermittent streams are not well understood.

The physical, biological, and chemical characteristics of six intermittent streams were studied in summer 1980. Streams investigated included Steward Creek in northern Illinois; Kaskaskia Ditch, Solomon, Otter and Blue Creeks in central Illinois; and Brushy Creek in southern Illinois. In addition, aquatic macroinvertebrate communities and their re-establishment in Solomon and Otter Creeks following drought conditions had been studied from 1977 through 1979. The purpose of the study was to:

1) Determine the effects of low-flow conditions upon water quality and aquatic life; and 2) To determine the population biology of aquatic life in streams with periodically intermittent flow, including (a) seasonal changes; (b) competition; (c) predation; (d) migration; (e) life cycles; (f) responses to nutrient input; (g) responses to other changes in water quality; (h) responses to physical changes in the streams; and (i) specialized uses of specific types of habitat.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: EXPANSION OF A FISH COMMUNITY TOXICITY INDEX FOR ILLINOIS (TASK ID)

OUTPUT TITLE: Phase I - Applying Bluegill Toxicity Indices to 4 Illinois Streams

ABSTRACT: The objective of this study was to adapt the Bluegill Toxicity Index system described in Lubinski, et al. (1974), Sparks and Anderson (1977) and Lubinski and Sparks (1980), for use by the Illinois Environmental Protection Agency (IEPA). The first phase of the study was designed to test the applicability of Bluegill Toxicity Indices (BTI's) to the Apple, Plum, Rock and Sangamon Rivers. The IEPA requested an analysis of BTI's for these streams because previous toxicity indices had been developed primarily for streams or reaches of streams that were considered highly to moderately polluted with fish toxicants. The four streams identified above, however, were thought to be less polluted and therefore valuable for comparative purposes as well as assessing the toxic nature of the individual streams. Toxicity indices for these streams were generated using the water quality data base of the IEPA's Ambient Water Quality Monitoring Network for the period 1972-1979. These toxicity indices were then compared to fisheries data bases that were generated by several state agencies and universities. This study identified problems with the current BTI program that could be eliminated during Phase II of the study.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: EXPANSION OF A FISH COMMUNITY TOXICITY INDEX FOR ILLINOIS (TASK ID)

OUTPUT TITLE: Modification of a Bluegill Toxicity Index System for use by the IEPA Phase II (March 1981)

ABSTRACT: This report presents a description of Bluegill Toxicity Index (BTI) systems used by the Illinois Natural History Survey, Aquatic Biology Section, and recommendations for their use in monitoring or surveillance programs of the Illinois Environmental Protection Agency. Previous development and uses of toxic unit systems, demonstrations of additive and non-additive effects, and specific limitations of BTI's are addressed. Component toxicity effects, and specific limitations of BTI's are discussed. Component toxicity calculations for 20 toxicants presently included in the BTI systems are presented. Operating instructions for the Tektronix 4051 and a CYBER 175 system are included, as are hard copy representations of typical sessions. The primary difference between these systems is that water quality data are input into the Tektronix 4051 system through a keyboard, but read from an IEPA water quality monitoring data tape into the CYBER 175 system.

A recommended protocol for the use of BTI's by the IEPA is outlined. The protocol includes recommendations for the exclusion of specific toxicants from BTI systems that are not supported by a minimum amount of toxicological data. Additional recommendations relate to the standardization (among toxicants) of equations that account for the effects of modifying factors on acute toxicity, and to methods for handling missing toxicant and modifying factor data.

A program listing (BASIC langauage) of the Tektronix 4051 BTI program is included as an appendix.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: TOXICITY OF CONVENTIONAL POLLUTANTS (TASK IE)

OUTPUT TITLE: Acute Toxicity of Chloride, Sulfates, and Total Dissolved Solids On Some Fishes in Illinois (September 1981)

ABSTRACT: Channel catfish fingerlings, largemouth bass fingerlings and bluegill fry were subjected to varying concentrations of chlorides and sulfates at water temperatures of about 20°C in waters relatively high in alkalinity and the salts of calcium and magnesium.

Median tolerance limits (TL50) were developed from bioassays performed over a period of 14 days. Resultant toxicity curves permitted the comparison of 24-hour and 96-hour assays with the 14 days.

The TL50 concentration for chloride ranged from 800 mg/l to 850 mg/l. Largemouth bass was the most tolerant of the three species.

There was not a perceptible difference in TL50 concentrations between bioassay runs with time lengths of 24-hour, 96-hour, and 14 days of chlorides.

The TL50 concentration for sulfate ranged from 1,000 mg/l to 1,100 mg/l. Largemouth bass was the most tolerant of the three species.

There was a difference for sulfate runs in TL50 concentrations for time lengths of 24-hour, 96-hour, and 14 days. The shorter runs produced more liberal values. For example, the TL50-96 hour, concentrations of sulfate ranged from 1100 mg/l to 1300 mg/l.

The TL50 concentration for total dissolved solids, where chloride was the principal constituent, ranged from 1300 mg/l to 1500 mg/l. Channel catfish was the most sensitive of the three fish species.

The TL50 concentration for total dissolved solids, comprised mainly of sulfate, ranged from 1400 mg/l to 1750 mg/l. Channel catfish was the most sensitive of the three fish species.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part J

Water Quality Standards Review Program

Projects of the Northeastern Illinois Planning Commission

PROJECT TITLE: DEVELOP REFINED STREAM CLASSIFICATIONS AND DESIGNATION OF USES (URPP 1027) (TASK 28)

OUTPUT TITLE: Draft Stream Use Inventory

ABSTRACT: Ten stream use inventories were completed for the following river basins: 1) DesPlaines River, 2) DuPage River, 3) Fox River, 4) Kankakee River, 5) Hickory Creek, 6) North Branch Chicago River, 7) Little Calumet River, 8) Chicago River, 9) Kiswaukee River and 10) Salt Creek.

The project abstract is found under Classification and Designation of Stream Uses URPP 1027.01. The draft contains information on potential uses as well as existing uses. This information was deleted from the final report.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: FISH TOXICITY: EAST BRANCH DUPAGE RIVER (URPP 1027.02) (TASK 5B)

OUTPUT TITLE: Study of Fish Toxicity in the East Branch DuPage River

ABSTRACT: This study examined the effects of toxic substances on the composition of the fish community in the East Branch of the DuPage River. Six alternative pollution control management strategies were tested with the toxicity index model developed by Richard E. Sparks and Associates at the Illinois Natural History Survey. The bluegill sunfish, Lepomis machrochirus, was used as the reference organism in the index because it is a fish species that is common in North America and its known sensitivity to many fish toxicity was simulated at several sites in the East Branch at the pollutant loading conditions existing during 1980, and compared to observed fish populations. Fish toxicity was then simulated over a range of potential treatment plant control strategies. These were:

1. Tertiary BOD removal (10 mg/l BOD_5), Nitrification (ammonia-N = 1.5 mg/l summer, 4.0 mg/l winter), combined sewer overflow (CSO) control, Post-treatment aeration (P.T.A.), chlorination.

2. Tertiary BOD removal, Nitrification, CSO control, P.T.A., no chlorination.

3. Tertiary BOD removal, Partial nitrification (ammonia-N = 4.0 mg/l summer, 6.0 mg/l winter), CSO control, P.T.A., no chlorination.

4. Tertiary BOD removal, Partial nitrification, CSO control, no chlorination.

5. Seasonal BOD removal (BOD_5 = 10 mg/l summer, 20 mg/l winter), seasonal nitrification ammonia-N = 4.0 mg/l summer, 12.0 mg/l winter), CSO control, no chlorination.

6. Secondary BOD removal (BOD_5 = 20 mg/l), Secondary nitrification (ammonia-N = 8.0 mg/l summer, 12.0 mg/l winter), CSO control, no chlorination.

Recommendations for a Management Program for the East Branch was made based on conclusions from the simulation.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

OUTPUT TITLE: PROJECT TITLE: CLASSIFICATION AND DESIGNATION OF STREAM USES URPP (1027.01) (TASK 5A)

OUTPUT TITLE: Stream Use Inventory

ABSTRACT: The contents of this output are intended to provide the background to prepare residents of northeastern Illinois to evaluate existing stream uses, and express their desires regarding future stream uses. Meetings were held with County Staff, the Countywide Water Quality Committee, and public treatment plant operators in the DuPage Basin. A series of public meetings were held to obtain the views of interested citizens.

A separate report has been prepared for each of the following river basins: (1) DesPlaines River; (2) DuPage River; (3) Fox River; (4) Kankakee River; (5) Hickory Creek; (6) North Branch of Chicago River; (7) Little Calumet River; (8) Chicago River, Sanitary and Ship Canal and Calumet Sag Channel; (9) Kishwaukee River; and (10) Salt Creek.

Each report compiles and summarizes the extensive stream data gathered by the Commission during the 208 Water Quality Study, as well as data gathered by many other agencies. Stream uses are categorized and the potential conflicts between them are identified. Stream characteristics which effect and are affected by stream uses are noted and defined. An important part of each report is Appendix B, which contains the Stream Use Maps. These maps show the existing stream uses as well as the riparian land use, which often controls the type of activity that occurs in or adjacent to the stream.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part J

Water Quality Standards Review Program

Projects of the Southwestern Illinois Metropolitan
and Regional Planning Commission

PROJECT TITLE: INVESTIGATION OF EXISTING STREAM USES, FACTORS AFFECTING STREAM USE, AND DESIRED STREAM USES (TASK 5)

OUTPUT TITLE: Stream Use Classification, Parts I & II (Report SWIL-MAPC 81-2, January 1981)

ABSTRACT: The Illinois Environmental Protection Agency intends to propose water quality standards which are based on specified stream uses. As a step toward water quality standards revision, one of Illinois' most crucial needs is the determination of the existing and potentially legitimate uses of all Illinois streams. This draft report documents existing and desired stream uses for major streams and lakes in Madison, St. Clair and Monroe Counties. The report is divided into three major sections. The first section describes methodology, the second section identifies existing uses for 16 streams and lakes, and Section III details public input regarding desired stream uses.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

208 PLANNING IN ILLINOIS

Part K

Fiscal Management

208 PLANNING IN ILLINOIS

Part K

Fiscal Management

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: FINANCING REGULATORY PROGRAMS (TASK XIIIB)

OUTPUT TITLE: Regulatory Strategies for Construction Site Erosion Control Programs: Forms, Costs, and Cost Recovery Mechanisms (November 1980)

ABSTRACT: The purpose of this study was to examine construction site erosion regulatory strategies of other states and develop a recommended strategy for Illinois. After an initial review of erosion and sediment control programs throughout the nation, five states which have well established programs of different types were selected to show the range of options available to Illinois. The states selected for individual case studies were: Maryland, Viriginia, Ohio, Iowa and Wisconsin. The studies included the review of program documents and interviews with state and local officials.

The report suggests that Illinois promote and publicize the existing soil erosion and sedimentation control programs through the Illinois Department of Agriculture, Division of Natural Resources and local Soil and Water Conservation Districts. Illinois EPA was recommended for a research and coordination role. When local programs are well known, the strategy suggests that statewide legislation to make local programs uniform and mandatory be considered.

The report is accompanied by seven Appendices and five separately bound case studies of state programs. The appendices document the data gathered, including state, county and municipal erosion and sediment control laws and, from Virginia, training and program review materials.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONTINUATION ALTERNATIVES FOR STATE AND AREAWIDE WQM PROGRAMS (ALTERNATIVES FOR MONITORING AND ENFORCEMENT FOR IEPA NONPOINT SOURCE PROGRAMS) (80-57)

OUTPUT TITLE: Anticipated Completion Date - June 1982

ABSTRACT: The purposes of this project are to determine continuing state and areawide WQM agency roles; identify integrating linkages between state and areawide plans; establish procedures for consolidation and maintenance of key WQM plan components; and develop financial support levels to undertake plan maintenance and implementation functions. One of the key outputs of this project will be consolidated WQM plans oriented toward providing consistent base information for use in construction grant and NPDES permit determinations. Additionally, this project will develop specific agreements with the areawide WQM agencies which will identify their areas of involvement in maintaining the WQM process. Emphasis will be placed on establishing a plan update and revision procedure compatible with the annual program plan process of the Agency.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'80

208 PLANNING IN ILLINOIS

Part K

Fiscal Management

Projects of the Northeastern Illinois Planning Commission

PROJECT TITLE: PILOT STUDIES ON FISCAL IMPACT OF PLAN IMPLEMENTATION (URPP 1023)(TASK 23)

OUTPUT TITLE: Fiscal Impact of Non Point Source Management Practices

ABSTRACT: This report identifies several municipal programs which may improve water quality if implemented. A cost benefit analysis of these water related programs was completed: street sweeping, storm water detention and soil erosion control, de-icing, phosphate, detergent control and water conservation.

Some of the programs examined are very expensive relative to the known water quality benefits to be derived from them. While other local government objectives might be advanced by implementing these programs, the technical evidence which would justify substantial investments in order to achieve water quality gains is lacking.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

208 PLANNING IN ILLINOIS

Part K

Fiscal Management

Projects of the Southwestern Illinois Metropolitan
and Regional Planning Commission

PROJECT TITLE: EVALUATE COST EFFECTIVENESS AND INSTITUTIONAL FEASIBILITY OF SHARED PERSONNEL PROGRAM IN ORDINANCE IMPLEMENTATION (TASK 8)

OUTPUT TITLE: Shared Personnel: A Plan Implementation Mechanism (Report SWIL -- MAPC 81-06, February 1981)

ABSTRACT: This report documents results of 208 Continuous Planning efforts to provide areawide Designated Management Agencies with information concerning the feasibility and cost-saving impacts of sharing personnel in 208 Plan implementation activities.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: FINANCIAL PROGRAM FOR CONTINUING PLANNING AND NON POINT SOURCE PLAN IMPLEMENTATION (PHASE I) (TASK 4)

OUTPUT TITLE: Financial Program for Continuing Planning and NPS Plan Implementation-Phase I (Report SWIL-MAPC 81-19) (September 1981)

ABSTRACT: This report investigates financing strategies for the continuing water quality management planning program and NPS implementation in the Illinois counties of Madision, Monroe, and St. Clair. It includes the identification of funding requirements and sources; alternative funding mechanisms; and evaluation of the most realistic and locally acceptable approaches.

Conclusions concerning financing NPS Control Implementation were:

1. Ordinance reviews and inspection should be integrated into existing municipal permit programs.
2. Maximum utilization of existing personnel should be made.
3. Communities lacking qualified personnel should explore personnel sharing.
4. The only feasible financial mechanisms are direct fees charged developers and allocation of general funds; the former appears more politically palatable.
5. Regulatory action should be considered very real possibility if a voluntary program is not undertaken.

With the present state of the economy, most municipalities are reluctant to assume new responsibilities. They are having sufficient difficulty financing existing programs and services. The overall financial climate must improve if extensive NPS control is to become a reality.

PLANNING AGENCY: SIMPAC
FEDERAL FUNDING CYCLE: FFY'80

PROJECT TITLE: FINANCIAL PROGRAM FOR CONTINUING PLANNING AND NONPOINT SOURCE IMPLEMENTATION (PHASE II) (TASK 1)

OUTPUT TITLE: Completion Date - September 30, 1982

The overall objectives of this multi-year (Phases I and II) project is the development of a strategy for financing continuing areawide planning (CPP) and NPS plan implementation efforts with execution of an acceptable and equitable financial program prior to Fiscal Year 1984.

The proposed project (Phase II) primarily addresses financing strategies for areawide CPP efforts with NPS plan implementation efforts/focusing on Agricultural Management Agencies and those non-agricultural Management Agencies not included in the Phase I project. The proposed Phase II project will provide a determination of required NPS plan implementation needs for the remaining Management Agencies (agricultural and non-agricultural); technical staff capabilities necessary to meet these needs; financial alternatives which could support NPS implementation efforts; and selection of preferred funding approach by individual Management Agencies.

PLANNING AGENCY: SIMPAC
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part L

Miscellaneous Other Planning Projects

208 PLANNING IN ILLINOIS

Part L

Miscellaneous Other Planning Projects

Projects of the Illinois Environmental Protection Agency

PROJECT TITLE: PROGRAM MANAGEMENT AND ADMINISTRATIVE SUPPORT (TASK IE)

OUTPUT TITLE: No Specific Report

ABSTRACT: This project funded the operational functions of the 208 program.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: WATER QUALITY MONITORING OF A FORESTED WATERSHED DURING HARVESTING ACTIVITIES (TASK VD)

OUTPUT TITLE: Stream Water Quality as Related to Land Use in Southern Illinois (May 1980)

ABSTRACT: The report contains a summary of pH, specific conductance and suspended solids data for 193 streams in southern Illinois between October 1979 and May 1980.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: LAND COVER/WATER QUALITY RELATIONSHIPS (TASK XIID)

OUTPUT TITLE: Land Use Maps for Little Grassy, Devils Kitchen and Lake of Egypt (February 1980)

ABSTRACT: The products of this project were three land use maps for the Little Grassy, Devils Kitchen and Lake of Egypt Watersheds. Land use categories represented were: Row and Field Crops, pasture, grassland, hardwood forest, pine, regenerating forest, campground, homesites, industry, bare earth, orchard and industry.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: AIR/WATER QUALITY RELATIONSHIP STUDY (TASK XII H)

OUTPUT TITLE:

ABSTRACT: This project was continued into FFY '79.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: SEDIMENT TRANSPORT ANALYSIS (TASK XII I)

OUTPUT TITLE: Statewide Instream Sediment Monitoring Program for Illinois: Interim Report (November 1981)

ABSTRACT: The project had two goals: 1) to collect and study data at 50 sediment monitoring stations located at strategic locations around the state; and 2) to act as a catalyst for a long-term multi-agency sediment monitoring program involving installation, operation, and study of data from a statewide sediment network.

The parameters measured at the 50 stations included suspended sediment concentration, percent of volatile solids present, particle size of suspended sediments, water discharge, river stage, and water temperature.

Twenty-seven stations were monitored on an intensive basis. An observer collected a sample once a day (twice daily during rising stages) during the period of approximately April 1 through July 31.

None of the sediment data were completely and thoroughly analyzed when the report was published. Approximately 5700 samples have been analyzed by the laboratory and are on-line. However, the analyses cannot be completed until all the data for the entire water year are available. After the analysis is completed the following information will be available:

1. Station name and number
2. Date
3. Time
4. Gage heights
5. Water temperature
6. Suspended sediment concentration
7. Percent volatile solids present
8. Particle size of selected suspended sediment samples

The suspended sediment concentration data will later be combined with the USGS discharge record to calculate the estimated sediment yield for each station.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: DATA ANALYSIS CAPABILITY FOR WQM PLANNING ACTIVITIES
(TASK XII J)

OUTPUT TITLE:

ABSTRACT: This project funded the Tektronix Digitizer.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '78

PROJECT TITLE: CONTINUATION OF AIR/WATER QUALITY RELATIONSHIP STUDY (TASK VI A)

OUTPUT TITLE: The Airborne Contribution to Solute Concentrations in Illinois Water: A Preliminary Assessment (June 1981)

ABSTRACT: This report investigates the effect of atmospheric contribution on water quality in Illinois. Air and water quality data which could be used to assess the contribution of air contaminants to water quality degradation were identified. The IEPA Illinois Air Monitoring Network, IEPA Air Pollution Permits Data, IEPA Simulated Data, the National Atmospheric Deposition Program, the EPA/NOAA and WMO Monitoring Network, the Illinois Ambient Water Quality Monitoring Network and a daily water quality network temporarily operated by the Illinois State Water Survey. Data from these sources were reviewed for possible application in a mass balance or a statistical approach to quantify water quality degradation from airborne constituents.

Appropriate air and water quality data were selected to initiate analysis: NADP and Illinois Water Quality Monitoring Network data for mass balance approach; and EPA/NOAA and WMO and ISWS daily data for a statistical approach. For the mass balance approach, 1980 annual mass input for eight constituents was estimated for nine major Illinois watersheds. Air and water data were compiled for the Little Wabash Watershed above Louisville and graphed to compare and analyze variation in the data. Neither approach was completed due to time limitations, funding limitations and the complexity of fully developing either approach. However, the completed portions accomplish important steps such as estimate wet atmospheric deposition in Illinois watersheds and compare variation in atmospheric wet deposition with the variation in stream water quality.

The major limiting factor in the development of an interactive system appears to be data base linkages. New analytic techniques will have to be developed to accurately reflect air/water quality impacts.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY '79

PROJECT TITLE: DESIGN AND OPERATION CRITERIA FOR IMPOUNDING RESERVOIR PERMIT REVIEW (80-60)

OUTPUT TITLE: Desirable Low Flow Releases From Impounding Reservoirs: Fish Habitats and Reservoir Costs. Volume I and Volume II Appendices

ABSTRACT: The purpose of this study was to develop a computer program to generate information on fish suitability for eight low flow releases at 123 gaging stations througout Illinois. The program also computes the capital cost of reservoirs with storage adequate to meet four supply rates, eight low flow releases and various design droughts.

The hydraulic geometry parameters flow velocity and depth, have been derived for 8 low flow releases at each of the 123 gaging stations. Methodologies have been developed for adjusting reservoir storage to allow for capacity loss from evaporation and sedimentation in the reservoir, for various design droughts and net water supply rates of 2, 5, 10 and 20 percent of mean flow. The velocity-depth domains have been analyzed for the juveniles and adults of the nine target fish: bluegill, bluntnose minnow, carp, channel cat, largemouth bass, smallmouth bass, drum, white bass, and white crappie. The domain charts indicate that most of the fish will be in the pools and that the desirable flow environment of some fish is quite different from that of others. Information on fish preference and reservoir costs at each of the stations is included in Volume II of this report.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'80

PROJECT TITLE: LAKE MICHIGAN FLOW DIVERSION STRATEGY BASED ON WATER QUALITY TRADE OFFS IN THE ILLINOIS RIVER (80-61)

OUTPUT TITLE: Lake Michigan Flow Diversion Study (In Progress)

ABSTRACT: This project used existing water quality models and developed a flow system to study flow diversion from Lake Michigan and water quality in the Illinois River. Parameters of particular concern in this study were ammonia and BOD. The project output outlined an approach to a management strategy taking into account effluent from the Chicago area, Lake Michigan diversions and water release from dams to maintain reasonable water quality in the Illinois River. A 7-Day 10-Year Low Flow map was to be updated (ISWS Bulletin 57, map 2).

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'80

PROJECT TITLE: DEVELOPMENT OF REGULATORY PROGRAM CRITERIA FOR FLOW VARIABLE POLLUTANTS (81-65)

OUTPUT TITLE: Anticipated Completion Date - January 1983

ABSTRACT: This project will evaluate and recommend the overall approach to develop flow variable sediment and associated pollutant transport criteria for lakes and streams.

Work to be performed will include a detailed literature search and evaluation of the USGS-IEPA ambient water quality and flow monitoring data. A gravimetric data base will be developed and compared to the historical turbidity baseline. The criteria will be based upon low, medium and high flow periods. Extensive use of the monitoring results from the Blue Creek M & E project and data base from the NURP effort will supplement the efforts to allow comparison of before/after BMP implementation to achieve the water quality goals. The analyses will factor the relationships of flow, river stage/lake detention, groundwater impact and water quality associated with runoff waters and stream/lake use characteristics. The output will include NPS target criteria for key network stations to monitor progress and redirect implementation efforts to achieve the Clean Water Act goals and objectives.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'81

PROJECT TITLE: PROCEDURES AND PROTOCOL FOR CONFORMANCE WITH WQM PLAN AND PROGRAM (81-71)

OUTPUT TITLE: Anticipated Completion Date - September 1983

ABSTRACT: The primary objective of this project will be to provide conflict resolution mechanisms for use of WQM plans where traditional programs have not developed adequate procedures. Additionally, situations which do not involve an active 201 grant or pending 402 permit, but nonetheless affect the WQM plan or issuance of future permits or grants will be stressed. The administrative requirements for implementing plan update and amendment record keeping will be established. This project will be developed in accordance with 40 CFR 35.1517, Conflict Resolution and 40 CFR 35.1533-4, Relationship to Other (WQM) Programs.

PLANNING AGENCY: IEPA
FEDERAL FUNDING CYCLE: FFY'81

208 PLANNING IN ILLINOIS

Part L

Miscellaneous Other Planning Projects

Projects of the Northeastern Illinois Planning Commission

PROJECT TITLE: PARTICIPATION IN URPP ACTIVITIES (UNIFIED REGIONAL PLANNING PROGRAM) (1001.70)(TASK 2)

OUTPUT TITLE: Updated 208 Plan incorporated into Unified Regional Planning Program

ABSTRACT: This project incorporated the 208 studies and work into the commission's role in to the Unified Regional Planning Program to avoid duplication with other planning activities.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: FISHABILITY OF WATER BODIES IN NORTHEASTERN ILLINOIS (URPP 1013)(TASK 13)

OUTPUT TITLE: Staff Report No. 31, Watersheds of Northeastern Illinois: Quality of Aquatic Environment (August 1978)

ABSTRACT: The study evaluates the existing capacity of stream reaches in Cook, DuPage, Kane, Lake, McHenry and Will Counties to support various classes of aquatic life. The evaluation is based upon water quality and fish population data. Data for a some of Kendall County was also included to determine how fishery resources are affected by the upstream reaches of the Fox River.

The report also contains information on stream orders, soils, diversity and equitability indices, and the Blue Gill Toxicity Index.

The study area was divided into individual watersheds according to the historical drainage pattern of the area. Some provisions were made to accommodate the major alterations of the area by man.

The thirteen watersheds evaluated were: 1) Chicago River/Sanitary and Ship Canal; 2) DuPage River; 3) Fox River; 4) Hickory Creek; 5) Kankakee River; 6) Kishwaukee River; 7) Lake Michigan; 8) Little Calumet River; 9) Lower DesPlaines River; 10) North Branch Chicago River; 11) Salt Creek; 12) Upper DesPlaines River, and 13) Virgil/Union Drainage Ditch.

The data was synthesized to produce contour maps of the habitat quality provided in each basin. Each stream is rated for habitat suitability according to the abundance, composition, and diversity of the fish population and the water quality. A rating of high quality signifies that the stream has undergone little modification from its original condition. Good, fair and poor represent successive steps of increasing habitat degradation.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: UPDATE OF FORECASTS OF POPULATION EMPLOYMENT, LAND USE, WASTE FLOWS (URPP 1015)(TASK 15)

OUTPUT TITLE: Minutes of Forecast Task Force

ABSTRACT: The Forecast and Growth Strategy Task Force consists of county planning directors and their key technical staff, representatives of municipal associations, and planners from major municipalities within the region.

The principal objectives of the task force are to provide overall guidance, direction, and assistance in developing methods and procedures for the forecasting process. The task force facilitates local acceptance of the forecast results, assures coordination of policy assumptions, and avoids duplication of technical effort.

Task force discussion has centered on the following topics: the coordination of programs between NIPC and local governments; the relationship between the forecasting process and growth strategy work; the memorandum of agreement between NIPC and Illinois Bureau of the Budget (IBOB); IBOB's revised population projections and the assumptions and methodologies used in their generation; alternative county level growth scenarios; the selection of prototype municipalities; the counties own "most probable" population projection for the year 2000; a review of the forecast work program; and the general usefullness of the task force all of which are referred to in greater detail in the enclosures.

One of the major results of the forecasting process to date has been the generation of county level alternative growth scenarios for the year 2000 which are discussed under a separate memorandum.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: CONTINUING WATER QUALITY MODELING - MODEL TRANSFER AND SETUP (URPP 1016.01)(TASK 16A)

OUTPUT TITLE: Transfer of computer tape to NIPC

ABSTRACT: This project funded the transfer of the Hydrocomp tape to NIPC and its setup.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: LAND COVER REEVALUATION AND DATA STORAGE (URPP 1016.02)(TASK 16B)

OUTPUT TITLE: A Reevaluation of Land Cover Estimates Used in the Northeasten Illinois Planning Commission 208 Project

ABSTRACT: The importance of land cover to the type and quantities of pollutants carried in storm water was reflected in the Northeastern Illinois Planning Commission's 208 Plan. Four types of land cover were represented in NIPC's water quality model: low land, crop land, grass land and impervious (hydraulically connect). This study checks the original estimates of land cover, used in water modeling, on a reach and basin by generating new estimates of land cover, subdivides the grass land category into urban grass land, rural grassland, and pasture, investigates the utility of this subdivision, and creates a computer file of land cover data. Various methodologies and their impact on land estimates are discussed. On the basin and reach level the NIPC/ASCS aerial photograph interpretation aggregated using random dot methodology appears to be more accurate than the original estimates with respect to both magnitude and distribution of the land cover categories.

There is the possibility that use of the new land cover estimates, in computer modeling of water quality, could result in the simulation of fewer DO violations for some reaches provided all other parameters are held constant at their present values.

The exact impact of the use of new land cover estimates of 208 recommended BMP programs and costs is difficult to assess unless existing and future water quality conditions are remodeled after recalibration using the new land cover estimates. It appears likely, however, that the extent and cost of urban BMPs could decrease while agricultural BMPs would increase.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: HIGH AND LOW FLOW WATER QUALITY ANALYSIS AND REPORTING (URPP 1016.03)(TASK 16C)

OUTPUT TITLE: Evaluation of Simulated Flow and Dissolved Oxygen Relationships in Northeastern Illinois Streams

ABSTRACT: The Hydrocomp Water Quality Model was used to determine the relationship between dissolved oxygen (DO) and flow at 23 river stations in the NIPC planning area. The sites were chosen because they were representative of the local water quality and the upstream activities affecting water quality. In some cases, they were chosen because they were representative of stream lengths having pronounced water quality problems with respect to DO.

Two types of plots were prepared. The first shows maximum and minimum simulated daily DO values opposite simulated average daily streamflow for the three years of simulation. The second shows simulated hourly DO values opposite simulated hourly flow for selected seven day periods. In all cases, the simulated data is for 1976 existing conditions. Plots were prepared for 23 key stations spread over nine watersheds in the NIPC planning area.

The procedure by which the plots were prepared including the computer code and control statements are documented in a separate report, "Plotter Program Documentation".

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: NIPC/MSD WATER QUALITY DATA GRAPHICS (URPP 1016.04)(TASK 16D)

OUTPUT TITLE: NIPC/MSD Water Quality Data Graphics (July 1979)

ABSTRACT: This report and the supporting graphical techniques were prepared to assist in presenting and explaining the water quality and stream flow data which were collected for use in the initial phase of the Northeastern Illinois Planning Commission's (NIPC) 208 Areawide Water Quality Management Study. Portions of these data were used in the calibration of the NIPC water quality model.

Water quality samples were collected and analyzed by the Metropolitan Sanitary District of Greater Chicago (MSDGC). Flow information was provided by the U.S. Geological Survey. Data were collected during 1976-77, from 48 sampling stations on lakes, rivers and streams in Cook, DuPage, Kane, Lake, McHenry and Will Counties, Illinois. A total of 20 parameters, including flow, were measured. This report presents information on eight of the more important parameters at 25 sampling sites.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: PRINT DAM AERATION REPORT (URPP 1026)

OUTPUT TITLE: Project was dropped in 10/16/78 grant amendment - no output

ABSTRACT: Under the initial 208 program, Illinois State Water Survey studied the effects of various channel dams on instream dissolved oxygen (DO) concentrations to determine the impact they have on water quality. The resulting report was to be reproduced for distribution to appropriate users at a cost of approx. $3,000.

In the NIPC Five-Year Strategy of January 24, 1979, this project was rescheduled to be included in the FFY '79 grant.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Fast Track

PROJECT TITLE: RECALIBRATION/VERIFY MODEL - CHICAGO WATERWAY (URPP 1016.08)(TASK 13)

OUTPUT TITLE: NIPC Chicago Waterways Model: Verification and Recalibration

ABSTRACT: The Northeastern Illinois Planning Commission modelled the water quality of Chicago waterways as part of its initial 208 WQM planning effort. The model calculated instream concentrations of pollutants and heat under a variety of combinations of climatic and discharge conditions. The model simulated the impact on instream water quality by various discharge levels. This included calculating the magnitude, frequency and duration of the effects. The original model was used to evaluate effects of various source control strategies on water quality.

It was necessary to recalibrate and verify the original waterways model after the Army Corps of Engineers proposed a large increase in the amount of water diverted from Lake Michigan to the waterway system.

The report describes the process of recalibrating and verifying the model. It also includes the conclusions of the Water Quality Subcommittee which reviewed the work.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: REPORT ON WASHOFF RESULTS AND SURROGATE VALUES (URPP 1016.09)(TASK 14)

OUTPUT TITLE: Washoff Review Study

ABSTRACT: The purpose of the Washoff Review Study was to test the initial pollutant accumulation and removal parameters used in the Northeastern Illinois Planning Commission's (NIPC) water quality model. This was done by applying the pollutant washoff functions of the model to 9 of the 16 small watersheds for which runoff data were collected.

These data were collected by the Metropolitan Sanitary District of Greater Chicago (MSDGC) and the U.S. Geological Survey (USGS) for 16 different individual land use types during several precipitation events occurring in the spring and summer of 1977. Data measurements were made at short time intervals, typically 5 to 15 minutes, and included streamflow as well as concentrations of BOD_5, NH_3, NO_3, and PO_4.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

PROJECT TITLE: EVALUATE INSTREAM AERATION (URPP 1016.11)(TASK 15C)

OUTPUT TITLE: Evaluation of Instream Aeration (March 1980)

ABSTRACT: The purposes of this staff paper were to: 1) Provide background information on and evaluate the levels of dissolved oxygen in local streams, 2) Describe natural and artificial instream aeration processes, 3) Provide an overview of the operation, problems and performance criteria relating to available artificial instream aeration systems, 4) Provide a discussion of cost and management considerations for instream aeration systems, 5) Describe the environmental and economic advantages resulting from use of instream aeration, and 6) Describe a prototype instream aeration system, its installation, its costs and the effects on D.O. levels in a reach of the East Branch DuPage River. Water quality modeling of the system indicated that aeration would raise the mean DO levels substantially above natural conditions. In addition, the frequencies and durations of expected low DO periods were reduced.

PLANNING AGENCY: NIPC
FEDERAL FUNDING CYCLE: FFY '78 Slow Track

208 PLANNING IN ILLINOIS

Part L

Miscellaneous Other Planning Projects

Projects of the Southwestern Illinois Metropolitan
and Regional Planning Commission

PROJECT TITLE: RE-EVALUATION OF MINERAL EXTRACTION SUB-PLAN (TASK 1)

OUTPUT TITLE: Reevaluation of the Mineral Extraction Subplan (June 1978)

ABSTRACT: Several additional tasks were identified during the "Surface Mining Control and Reclamation Plan of 1977" review. These could be undertaken under the direction of the Areawide Management Coordinating Board (AMCB) in the 208 continuing planning/management process. Once the plan has been certified and approved and the AMCB has been established as a functioning body, these tasks will be presented to the AMCB for evaluation and, as appropriate, for implementation. Pending clear definition of roles and responsibilities of implementing agencies, and establishment of a State regulatory program and reclamation plan, SIMAPC will continue to monitor state activities to insure maximum local input and involvement in implementation of PL 95-87.

PLANNING AGENCY: SIMAPC
FEDERAL FUNDING CYCLE: FFY '77 Supplemental